

THE APSE MOSAICS
OF ST. SOPHIA AT ISTANBUL
REPORT ON WORK CARRIED OUT IN 1964

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THE mosaics decorating the apse and bema of St. Sophia comprise the following principal elements: an enthroned Virgin and Child in the conch of the apse, a commemorative inscription on the face of the apse semi-dome, two standing archangels in the soffit of the bema arch (the one on the north side has almost entirely disappeared), and various ornamental borders (fig. 1). These mosaics remained exposed to view until the first half of the eighteenth century, and were delineated by the travellers Grelot (1672) and Loos (1710), at which time both archangels appear to have been preserved in their entirety. Some time between 1710 and *ca.* 1750 the apse mosaics were covered with a coating of plaster or whitewash. They were revealed for a brief time during the restoration of the building by the Fossati brothers (1847–49) whose record of them, hurried and unsatisfactory as it is, nevertheless indicates that the mosaics were found then in substantially the same condition in which they are today.¹ The Fossatis concealed the mosaics once again with plaster and various stenciled designs painted in oils.

The uncovering of the apse mosaics was carried out by the late Thomas Whittemore between 1935 and 1939. Whittemore published a few photographs of these mosaics,² but the detailed report he was preparing remained unfinished when he died (1950). The lack of precise information concerning the apse mosaics has had the usual result of encouraging scholarly speculation. In particular, the dating of these mosaics has led to a measure of disagreement (ranging from the early eighth century to the mid-fourteenth) that is phenomenal even in so controversial a subject as the history of Byzantine art.³ In

¹ For the foregoing details, see C. Mango, *Materials for the Study of the Mosaics of St. Sophia at Istanbul*, Dumbarton Oaks Studies, VIII (Washington, D. C., 1962), pp. 80ff., 100; figs. 2 (Grelot drawing), 90 (Loos drawing), 92, 104–5 (Fossati drawings). Grelot erroneously represented a Mandyliion in the soffit of the bema arch. Fossati's sketches of the preserved archangel (Archivio Cantonale, Bellinzona, Nos. 103, 357, 374) remain unpublished, but they do not contribute any additional information.

² *AJA*, XLVI (1942), pls. 1–IV; *Mosaics of Haghia Sophia at Istanbul* (Boston, 1950), pls. 24–29.

³ Whittemore himself believed that the mosaics were made by the painter Lazarus shortly after the restoration of icons in 843: "On the Dating of some Mosaics in Hagia Sophia," *The Metropolitan Museum of Art, Bulletin* (Summer 1946), p. 44f.; *Mosaics of Haghia Sophia*, Preface. So also V. N. Lazarev, *Istorija vizantijskoj živopisi* (Moscow, 1947), p. 84ff.; A. Frolow, "La mosaïque murale byzantine," *Byzantinoslavica*, XII (1951), p. 189f.; A. Grabar, *L'iconoclisme byzantin* (Paris, 1957), p. 189ff. (between 843 and 855).

Here is a sampling of other opinions: G. Galassi, "Recenti ricuperi a Santa Sofia," *Felix Ravenna*, LVI (1951), p. 31ff. (early eighth century); *id.*, *Roma o Bisanzio*, II (Rome, 1953), p. 308ff. (archangel either eighth or tenth/eleventh century; Virgin's face pre-Iconoclastic, the rest of the figure being Comnenian or Palaeologan); C. R. Morey, *Mediaeval Art* (New York, 1942), p. 107 (the Virgin a later replica of an original made between 867 and 886); *id.*, "The Mosaics of Hagia Sophia," *The Metropolitan Museum of Art, Bulletin* (March 1944), p. 205f. (A.D. 866–67); J. Beckwith, *The Art of Constantinople* (London, 1961), pp. 62f., 145 (archangel ninth century; Virgin, except for her face, largely a fourteenth-century restoration); G. Galavaris, "Observations on the Date of the Apse Mosaic of the Church of Hagia Sophia in Constantinople," *Actes du XII^e congrès international d'études byzantines, Ochride*, III (Belgrade, 1964), pp. 107–110; *id.*, "The Representation of the Virgin and Child on a

order to resolve this important question and to present an accurate description of the apse mosaics, it was essential to study them at close quarters. Accordingly, a scaffold rising to a height of nearly 30 m. was erected in the apse in the spring of 1964. This gave us the opportunity not only to examine the mosaics in minute detail, but also to carry out some badly needed conservation work; namely, to free from plaster and paint large areas of ornamental mosaic, in particular the magnificent garland that circles the base of the apse semidome (these had been only partially cleaned by Whittemore), and to treat areas of loss in a uniform manner. This work was completed by the winter of 1964.

In order to make our findings available with a minimum of delay, we have restricted the scope of this report to a factual description of the mosaics and of the chronological evidence that may be extracted from them. This information is interpreted by us in the light of whatever scanty evidence is provided by mediaeval sources. A discussion of artistic style and iconography has been deliberately omitted for future treatment.

As before, it is our pleasant duty to extend our thanks to the Turkish authorities and in particular to Bay Feridun Dirimtekin, Director of the Ayasofya Museum, for their friendly cooperation and enlightened interest in our work. We should also like to express our appreciation to the members of our staff for having carried out an unusually arduous task.

DESCRIPTION OF THE MOSAICS

I. THE VIRGIN AND CHILD

The Virgin who occupies the center of the apse semidome is represented enthroned with the Child seated in her lap (fig. 2). She rests her right hand on the Child's right shoulder, and her left, which holds a handkerchief, on the Child's left knee. The figure is complete except for an area of loss (roughly 0.80 m. high and 0.70 wide) on the Virgin's left side corresponding to her left forearm and elbow, the Child's left hand, and part of the upper cushion placed on the throne. There is, furthermore, a fissure, caused by a structural crack in the shell of the semidome, which runs down the middle of the figure to the apex of the central window. It is clear that the mosaic was executed at a time when the semidome had already undergone the deformations it exhibits today.

With regard to the proportions of the figure, certain considerations ought to be borne in mind. The dimensions given below have been measured on the curve and show that, in general terms, the scale diminishes as one goes higher up the figure. This diminution, though not consistent (thus, the Virgin's feet are too small even by normal standards), is unmistakable: the Virgin's head

'Thokos' on Seals of the Constantinopolitan Patriarchs," Δελτίον τῆς Χριστιανικῆς Ἀρχαιολογικῆς Ἑταιρείας, 1960-61 (1962), especially p. 159ff. (Virgin ca. 1355); G. Mathew, *Byzantine Aesthetics* (London, 1963), p. 138 (Virgin "almost certainly later than the earthquake of 1346" [sic]).

is too small in relation to her total height (the proportion is 1:8.3), her right hand is markedly smaller than her left hand, and the Child's figure, too, starting with rather large feet, loses scale towards the top. This anomaly cannot be explained by any rational attempt on the part of the artist to counteract optical distortion. Since the figure of the Virgin is placed above the windows of the conch, it lies, not as normally, on the quadrant of a circle, but in the upper half of a quadrant (see fig. C), and if we drew an imaginary line from the top to the bottom of the composition, this line would be at 30° to the horizontal. To see the mosaic at right angles from the ground one has to stand at the eastern end of the building, in line with the eastern exedrae. From the middle of the nave the top part of the mosaic is foreshortened more than its lower part, so that the proportion of head to body becomes about 1:9. It is only if one stands directly below the mosaic (a position inaccessible to the mediaeval worshipper) that the proportions become more nearly normal. In other words, the mosaicist laid out the figure as if it were meant for the lower ring of a dome, to be viewed straight up, as, for example, in the Ascension dome of St. Sophia, Salonica, where the figures of the Virgin and apostles are correctly lengthened with relation to their heads.⁴ Note that in the apse of the latter church the head of the enthroned Virgin is, on the contrary, disproportionately big.⁵

What surely happened in our case is that the mosaic of the Virgin was designed from a platform more or less level with the windows of the apse semidome. If we suppose that the artist took his vantage point directly below the crown of the semidome or a very short distance further west, as he would have had to do in order to see the whole composition in one glance, then the proportions of the mosaic become reasonably normal, as shown in figure 2 and, even more markedly, in figure 12, which was photographed from a point below the bema arch at the level of the marble cornice (proportion of head to entire body 1:6.6).⁶ For further confirmation of our suggestion, note that in figure 12 the seat and footstool of the Virgin's throne appear nearly horizontal and the posts of the throne vertical, whereas when the mosaic is seen from below (cf. fig. 1) the seat seems to sag in the middle and the posts to come apart at the base. In other words, the artist gave no thought to the appearance of the mosaic from the ground: he designed the composition free-hand and gave it the proportions which looked correct from his scaffold. Naturally, he could not have used any form of squared up sketch for transferring the design on to the wall.⁷

⁴ Cf. O. Demus, *Byzantine Mosaic Decoration* (London, 1948), p. 32.

⁵ Diehl, Le Tourneau, and Saladin, *Les monuments chrétiens de Salonique* (Paris, 1918), p. 140.

⁶ This should serve as a warning against reliance on photographs for stylistic analysis. On the older photograph of the Madonna reproduced in Mango, *Materials*, fig. 106, the proportion of head to body is 1:7.5, while in the general view of the apse published by Whittemore, *AJA*, XLVI (1942), pl. II, it is 1:8.2.

⁷ As has been claimed for the apse mosaic of Tsromi in Georgia: Š. Ja. Amiranašvili, *Istorija gruzinskoj monumental'noj živopisi*, I (Tbilisi, 1957), p. 24.

Dimensions

Total height of composition from top of halo to bottom of footstool	4.89 m.
Maximum width of composition	3.18
The Virgin: Height of figure from top of hood to level of left foot	4.39
Height of head from top of head to chin	0.53
Height of face to lower edge of kerchief	0.33
Maximum width of face excluding ears	0.25
Length of nose	0.13
Length of eyes	0.08
Length of mouth	0.065
Diameter of halo	1.04
Length of middle finger of right hand	0.18
Length of middle finger of left hand	0.25
The Child: Height of figure excluding halo	1.99
Diameter of halo	0.565
Height of head	0.34
Width of face from ear to ear	0.225
Length of index finger of right hand	0.10

The Virgin's Halo

The outline consists of four rows of red glass tesserae. The gold field of the halo is set concentrically, except for the trim round the head and shoulders which is three rows wide. Mixed with the gold cubes is a tiny proportion of silver ones. The underpainting on the setting bed is red.⁸

The Virgin's Face and Neck (fig. 4)

The eyebrows consist of a single row of black glass tesserae below which is a shadow line of purple-brown glass. The upper eyelids are in black glass, the lower eyelids in purple-brown glass. Whites of eyes: the lighted parts are of white limestone cubes, the shaded parts of olive glass. Pupils: the outline and centers are of black glass, the remainder of purple-brown glass. Intentional damage has been caused to both eyes perhaps by Fossati's workmen.^{8a} The ridge of the nose consists of two vertical rows of fine-grained white marble, followed on the right (illuminated) side by one row of coarse-grained Proconnesian white marble and two rows of cream marble; on the left (shaded) side by one row of pink marble, one row of purple-brown glass, two rows of olive glass, and two rows of yellow-green glass. The tip, like the ridge, of the nose is in smooth white marble. The nostrils are of black glass, the dimple shadow under the nose is in purple-brown glass. The parting line of the mouth is in red glass. The upper lip, the high light on the lower lip and the corners of the mouth are in vermillion glass. The shadow under the mouth is in purple-brown glass.

⁸ As usual, there are three layers of lime plaster under the mosaic. The first two are of rather coarse consistency and contain a considerable admixture of chopped straw. The final layer or setting bed is of fine consistency. The total thickness of plaster is 3.5 to 4.5 cm.

^{8a} Cf. Mango, *Materials*, p. 14, note 36.

The flesh tones are in the following materials: fine-grained white marble, Proconnesian white marble, milky off-white glass (used along the right edge of the face), cream marble and three shades of pink marble. There is a touch of vermilion glass on the tip of the chin, and three lines of it on the left cheek. The shaded parts of the face consist of purple-brown glass, olive glass, light green, and yellow-green glass. The ears are not delineated. The tesserae used in the face are occasionally as small as 3 mm. square. There are small areas of loss on the forehead, under the right eye, and on the tip of the chin.

Under the chin there is a fairly heavy shadow in purple-brown glass and green glasses, the latter extending to the shaded (left-hand) side of the neck. There is, further, a line of light green glass at the base of the neck.

The Virgin's Right Hand (fig. 5)

The lower line of the fingers and of the back of the hand is in red glass. The flesh tones are in fine-grained white marble, Proconnesian white marble, and three tones of pink marble; the shadows are in yellow-green glass. The knuckles on the index and middle fingers as well as the fingernails are imperceptibly indicated in fine-grained white marble. The nails are not outlined as in the left hand.

The Virgin's Left Hand and Handkerchief (fig. 6)

The thumb and fingers are outlined on the spectator's right side with mat brown glass which also forms the heavy shadow on the back of the hand. The lighter shadow near the wrist as well as one line on the left side of the ring finger are in yellow-green glass. The flesh tones are the same as in the right hand. The nails are outlined in red glass.

Folded over the thumb is a handkerchief consisting of white Proconnesian marble, outlined on the spectator's left side with two rows of white limestone tesserae. Limestone is also used for the tasselled fringe on the left, but not on the right extremity of the handkerchief.

The Virgin's Feet (fig. 7)

The feet, which are disproportionately small (the exposed part of the left foot being only 0.20 m. long), are shod, as usual, in red slippers. Originally, the slippers were rendered in two tones: red glass was used for the shaded parts, while the lighted parts consisted of cubes dipped in red lead paint. The paint has largely flaked off, revealing both glass and stone tesserae of different colors, gold, silver, green, blue, etc.⁹

⁹ This was also true of the kneeling emperor's shoes in the narthex panel, as noted by W. Salzenberg, *Alt-christliche Baudenkmale von Constantinopel* (Berlin, 1854), p. 102. Following the loss of the red paint, the shoes now appear white. Whittemore is mistaken in stating that this was their original color: *The Mosaics of St. Sophia . . . Preliminary Report on the First Year's Work* (1933), p. 19. The same applies to the Virgin's slippers in the mosaic of the southwest vestibule. Whittemore notes that they have an oval inset of red glass, the remainder of the slippers being made of "gold and silver tessellae turned on all faces." The latter, which must have been dipped in red paint, he mistakenly interprets as denoting "soft gilded leather": *The Mosaics of St. Sophia at Istanbul. Second Preliminary Report* (1936), pp. 12, 45.

The Virgin's Garments

The kerchief covering the Virgin's head is of white Proconnesian marble with a shadow line and sets of triple fold lines in turquoise glass. The kerchief is outlined against the face with a single line of black glass tesserae.

The Virgin is dressed, as usual, in a *stola* and a *maphorion*. Both are of the same color. The *stola* is visible below the neck, at the cuff of the right arm, and from the knees down. The stuff of the garments is indicated by means of only four shades of glass tesserae: turquoise, cobalt blue, dark blue, and black (at times pure black, at times purplish). The turquoise has undergone considerable surface deterioration causing it to turn a paler shade. This is especially noticeable at the Virgin's right knee, and produces, when viewed from a distance, the deceptive appearance of an exaggerated high light. The *maphorion* is adorned with cruciform *segmenta*, each consisting of four little gold squares; one of these ornaments is placed in the center of the hood and one on each shoulder. The edge of the *maphorion* where it falls down from the left arm has a double edging in pale turquoise glass with the high lights indicated in white marble. Attached to the hem are tassels consisting of two or three threads tied in a knot. The tassels are rather schematically drawn; they are in white marble where they are against the blue of the *maphorion* and in blue glass where they are against the gold of the footstool.

The Child's Halo

The halo is outlined with three rows of red glass tesserae. The arms of the cross, which are nearly straight, are in white Proconnesian marble. The field of the halo is in gold, set concentrically. There is no admixture of silver cubes in the gold.

The Child's Head (fig. 8)

There is intentional damage to the right eye. Further areas of loss occur above the right ear, at the top of the head, and down the left side of the hair to a point just above the left ear.

The Child is shown fair-haired. The lighter strands of hair are in yellow glass and yellow-green glass, the darker strands being in clear brown glass (gold cubes turned sideways) and mat brown glass. Accents are provided by occasional gold strands. A triple tuft falls over the middle of the forehead.

The flesh tones of the face and neck are of the following materials. Fine-grained white marble is used for the projecting or high-lighted parts, viz. the center of the forehead, above the eyebrows, one vertical row down the ridge of the nose and one transverse row across the top of the bridge, the tip of the nose, the top of the chin, and a few lines under the eyes. The grey vein of Proconnesian marble provides light shadows on the ridge of the nose (vertically, on either side of the white line), between the eyebrows, on the right side of the forehead (inside the green shadow line), under the eyes, and in a small patch to the left of the mouth. Three tones of pink marble are used, the

palest mostly in the forehead, the two more intense tones in the cheeks and chin. Cream marble outlines the nose and nostrils. There are three tones of green glass: light yellow-green, yellow-green (under the eyes, on the right side of the neck, and on the right side of the forehead) and pale green (outline of the right jowl). Olive glass is used in two tones (one yellowish) to outline the entire left side of the head and in conjunction with purple-brown glass in the shadows round the eyes and under the mouth. Purple-brown glass outlines the nose and eyes.

The eyebrows, eyelids, nostrils, and corners of the mouth are in slightly purplish black glass. The parting of the mouth is in deep red glass. Vermilion glass is used in the lips, small spots on the cheeks, a spot on the bottom part of the chin, and others on the right ear. The whites of the eyes are in white limestone.

The Child's Right Hand (fig. 5)

The right hand, which alone is preserved, is rather clumsily drawn. It is held in blessing, with the ring finger bent back and joined to the thumb. The spaces between the tips of the fingers have been left in unset plaster. The underside of the fingers and hand is outlined in deep red glass. The flesh tones are rendered by means of white marble, grey Proconnesian marble, and three shades of pink marble. The shadows are expressed in yellow-green and pale green glass.

The Scroll

The scroll (partially destroyed), which was held in the Child's left hand, consists of a vertical strip, two to three rows of cubes wide, of mat white limestone; this is surrounded by two rows of Proconnesian white marble. The shadow line on the spectator's right is in two to three rows of pale turquoise glass, which also formed the circular opening at the top of the scroll.

The Child's Feet (fig. 9)

The right foot, covered except for the toes and the lower part of the instep, is shown in head-on foreshortening. The left foot is in profile (length 0.34 m.). The feet are shod in sandals, the sole of which consists of a double row of gold cubes, and the thongs of one row of gold, bordered with clear brown glass. The flesh tones comprise fine-grained white marble, Proconnesian white marble, and three tones of pink marble. The shadow line along the sole of the left foot is in light yellow-green and yellow-green glass. The right foot has a green shadow line separating the toes from the instep.

The Child's Garments

As in the case of the Virgin, there is no distinction in color between the tunic, of which the right sleeve and the portion covering the breast are visible,

and the himation which envelops the rest of the body. The basic color is gold. The high-lighted or forward parts are in silver, the shadows in mat brown glass. Darker fold lines are in transparent glass (gold cubes placed on their side), which is mostly brown, sometimes greenish.

The Throne (figs. 10, 11)

The throne on which the Virgin is seated is seen from the right and slightly from above. Owing to faulty perspective, its construction is not at once apparent. The horizontal seat is meant to be supported on two pairs of square posts, each pair being braced together by a cross-bar. The front post on the spectator's left has a ball base, but this is not the case with the rear post on the right. The right and left sections of the throne are differently proportioned (thus, the thickness of the seat is 0.21 to 0.245 m. on the left and 0.32 on the right) and the cabochon stones decorating the respective parts do not line up.¹⁰ There are some further inconsistencies which will be described below.

The receding parts of the throne are made of a coarse granite which was originally of a brown color, but has now paled to a grey of unsuitable shade. The granite tesserae are of varying sizes up to 2 cm. long, and have been untidily set in horizontal rows, except in the cross-bar on the spectator's right, where they are set on the segment of a circle. Large and small tesserae have been used indiscriminately.¹¹

The horizontal seat of the throne is outlined on the spectator's left side with the same grey granite, except that about two-thirds of the upper outline are in three rows of mixed brown glass, mat and clear. On the spectator's right, the front and back outlines of the top of the seat are in clear brown glass, while the side of the seat and the lower front edge are outlined in granite.

The front of the seat is decorated with cabochon stones, alternately rectangular and oval. Between each stone are three pearls set in a vertical row. The stones, which are made alternately of green and red glass tesserae, have silver mounts outlined in brown glass. The pearls are of Proconnesian marble and have shadows of brown glass.

The left front post of the throne is outlined on the spectator's left with grey granite, except for the bottom 16 cm. of the outline which is in brown glass. The decoration of the post consists of two oval and two rectangular stones and ten pearls. The oval stones are red, the rectangular ones green. The mounts are, once more, silver, but they are outlined with granite cubes. The four top pearls have brown glass shadows, the four middle pearls shadows of grey granite, and the two bottom pearls blue glass shadows. Of the two bottom

¹⁰ In order to appear horizontal from below, the seat of the throne should have been drawn slightly convex. This was a procedure familiar to Byzantine mosaicists in the case of apses decorated with a monumental cross: cf. P. A. Underwood in *Dumbarton Oaks Papers*, 13 (1959), p. 239. The side of the seat on the spectator's left (fig. 10) does, in fact, dip slightly towards the edge and, consequently, does not line up with the horizontal rows of gold cubes in the background. On the right, however (fig. 11), the seat is horizontal and therefore nearly parallel to the lines formed by the gold tesserae of the background. This inconsistency further aggravates the imbalance between the two halves of the throne.

¹¹ The crumbly nature of this stone would have made it very difficult, in any case, for the tesserae to be cut to a uniform size.

pearls, the one on the right is disproportionately big and its blue shadow cuts into the vertical outline of the post. The base of the post is outlined in dark blue glass.

The front post on the spectator's right is decorated with a red oval stone and a pair of green rectangular stones, as well as with pearls. As we have said, these stones do not line up with those on the left-hand post for the reason that the seat of the throne is considerably wider and comes lower on the right side than it does on the left.

The Cushions

Two cushions are placed on the seat of the throne. Although the Virgin is meant to be resting on them, the cushions give the impression of being laid behind her back. The upper cushion has its lighted parts in white Proconnesian marble. Light shadows are in grey Proconnesian marble, medium shadows in pale turquoise glass, and heavy shadows in turquoise glass. The upper cushion is ornamented with ivy leaves in red glass tesserae. The greater part of this cushion on the spectator's right has been destroyed. The lower cushion has its high lights in yellow glass mixed with yellow-green glass. The main body of the cushion is in leaf-green glass, while medium shadows are in turquoise glass, partly decayed, and heavy shadows in dark blue glass.

The Footstool (fig. 7)

The footstool is shown in reverse perspective and is placed to the right of center with regard to the throne. The front of the footstool is 2.34 m. long at the base; the height of the side increases from 0.33 m. at the front to 0.365 at the rear. The front, like the top of the footstool, is gold, whereas the side is shaded in mat brown glass with a sprinkling of gold cubes. The outline is in dark blue glass, the upper one of the front side being the heaviest (five rows wide). The lower horizontal and two vertical outlines of the front side are four rows wide, the lateral outlines three rows wide. The back of the footstool has no blue outline.

The front and side of the footstool are decorated with cabochon stones and pearls. The front has a diamond-shaped stone in the middle and three rectangular stones on either side; the side, an oval stone in the center flanked by two rectangular stones. The mounts of the stones are gold with blue outlines. As on the throne, the stones are red and green alternately, but here there is an interesting refinement: some of the stones (the third, fifth, sixth, and seventh counting from the left) are in two tones of the same color. In the case of red stones, the deeper tone is provided by red glass, the lighter by means of cubes of different colors that were dipped in red lead paint. In the case of green stones, leaf-green and blue-green glass provided the two tones needed.

Observation of this segment of the mosaic makes it possible to determine the sequence in which the work was carried out. The figure of the Virgin and Child was made first. Secondly, the mosaicist made the blue outline of the

footstool, the tesserae of which conform to the lower line of the Virgin's *stola*. Thirdly, he bordered the upper and lower outlines of the front of the footstool with four horizontal rows of gold cubes. Next, he set the stones and pearls, working from right to left and from bottom to top: note that the mount of the central diamond-shaped stone is, for lack of room, amputated at the top, as are also the two upper pearls, one on each side of it. Finally, the mosaicist filled in the gold ground between the stones and pearls.

The Gold Background of the Apse Semidome

An irregular area of gold ground surrounding the Virgin and Child was set in the same bed of plaster as the figure. The limits of this area are indicated by a suture which is, for the most part, easily discernible (fig. 3). Anticipating our detailed observations on this suture (see *infra*, p. 140), we may proceed to describe the probable sequence in which the mosaics of the semidome were made. In the first place, the entire semidome, roughly above the line formed by the tops of the windows, was covered with a preliminary coating of plaster containing an appreciable proportion of chopped straw. Upon this first coating was laid a second thickness of plaster corresponding to the area intended for the figural composition and allowing sufficient room all round it. The setting-bed of finer plaster was then applied, probably in smaller sections, although the boundaries between them cannot be traced. As usual, the artist proceeded to paint upon the setting-bed the subject of his composition, and in so doing he colored yellow the background forming the immediate surround of the figure. The figural mosaic was then made, starting at the top and working downward. The composition turned out to be somewhat taller than originally envisaged, with the result that its lower extremity came to the very edge of the bed of plaster that had been laid and, incidentally, rather too close to the top of the central window. It may be observed that the rear right post of the throne came so close to the edge of the plaster that its corner had to be rounded off (figs. 3 and 11). Possibly, additional patches of plaster had to be added to accommodate parts of the composition, and this may explain some of the irregularities we have observed, e.g., the change in the material used for the outline at the lower extremity of the left-hand post of the throne. A trim of gold tesserae, two to four rows wide, was then made round the entire composition, after which the mosaicist proceeded to cover with gold as much of the plaster bed as had been laid. He knew that the gold cubes had to be set on concentric curves, but he did not take the trouble of marking out exact setting-lines, with the result that he sometimes misjudged the direction of the lines and had to correct himself by inserting wedge-shaped patches of gold mosaic. After this process had been completed, the remainder of the conch was covered with a second, and then a third layer of plaster. This time the craftsman took a center point immediately above the Virgin's head and, probably using a long cord attached to a pin, marked out a number of concentric semicircles. A small area of loss to the south of the composition and more or less level with the Child's head has enabled us to ascertain that these

guide-lines were indicated in red paint upon the second coat of plaster. The over-all, gold background was laid with the help of these guide-lines, but with the inevitable result that the rows of tesserae did not exactly line up with those in the gold ground belonging to the immediate surround of the figure.

The average size of the cubes used in the background is 5 to 6 mm. square, and there are roughly 225 of them per 10 cm. square. Mixed with the gold is an appreciable proportion of silver tesserae. This admixture is least in the immediate surround of the figure and more considerable in the over-all background, but there is no consistency about the proportion of silver, which in places is as much as 10 percent, in others almost nil. In addition to the silver, there is also a sprinkling of red glass cubes in the over-all background, a peculiarity we have also observed in the mosaic of St. Ignatius Theophoros in the north tympanum. The underpainting on the setting-bed of the over-all gold background (as distinct from that of the gold surround of the figure) is red.

2. THE INSCRIPTION (figs. 13, 14)

The face of the apse semidome was occupied by an inscription commemorating the restoration of religious images after the defeat of Iconoclasm. The full text, preserved in the *Palatine Anthology* (I. 1) was as follows:

"Ἀς οἱ πλάνοι καθεῖλον ἐνθάδ' εἰκόνας
ἄνακτες ἐστήλωσαν εὐσεβεῖς πάλιν.

That is: "The images which the impostors had cast down here pious emperors have again set up." Today, only the very beginning and end of the inscription remain: + ACQ BEICΠAΛIN.¹² The same letters were uncovered by the Fossati brothers in 1847-49, whose record of them is, however, rather confused.¹³ The identification of the preserved fragments with the distich in the *Anthology* is due to Antoniadēs.¹⁴

The inscription was written in capital letters 0.40 m. high on a gold band 0.54 to 0.57 m. wide. The letters are in dark blue glass. The background is gold with a small admixture of silver, set in widely spaced rows of angled tesserae, as was often done on vertical surfaces. The setting-bed under the gold was painted yellow. For the juncture between the inscription and the garland borders on either side of it, see *infra*, p. 138f.

3. THE GARLAND BORDERS (figs. 14-24, 41)

Sumptuous garland borders were placed on either side of the commemorative inscription (i.e., one running round the soffit of the bema arch along its eastern edge, the other convex and folded over the rim of the apse semidome), along the base of the apse semidome, and under both archangels at the springing of the bema arch: roughly seventy running meters in all, of which about forty-four are preserved, either entirely or in part. Furthermore, a similar garland border

¹² A tiny portion of the lower curve of an *epsilon* is visible before the *beta* in the tail end of the inscription.

¹³ See Mango, *Materials*, p. 82.

¹⁴ *Ἐκφράσεις τῆς Ἀγίας Σοφίας, III (Leipzig-Athens, 1909), p. 29ff.

at a somewhat smaller scale, and again convex, folds round the interior edges of the five windows of the apse, totalling about thirty-one running meters.^{14a}

The garland borders are delimited by a double outline normally consisting of three rows (two round the windows) of terracotta tesserae or marble tesserae dipped in burnt umber paint, and of two rows of white marble tesserae. Within this outline the background is gold with an admixture of silver cubes. The garland itself consists of a dark blue sheaf bordered on either side with a row of green bay leaves. The leaves are inclined in the direction in which the garland is proceeding, and the tips of the leaves are, here and there, bent over backwards. Round the blue sheaf is twined spirally a silver (occasionally white marble) ivy vine. Attached to this vine, in addition to normal spade-shaped leaves, are five-petalled flowers, clusters of berries, and "pears," all usually in silver. The space between each turn of the vine is filled with a variety of vegetal motifs, to wit, curving stems bearing pomegranates, pears, and circular flowers on short straight stems. The pears and flowers are usually arranged in rows of three. In the intervening spaces are sprinkled circular berries, either red or gold.

Wherever the garland has to turn at a right angle, it is contained in a kind of L-shaped tube which gives the appearance of being made of silver. The rotundity of this tube is indicated by parallel bands of colors, usually white limestone or marble in the middle, shading off on either side first to silver, then to turquoise, then to dark blue. The ends of the tube are folded over, and there is a two-tone red ribbon twined round the tube.

If we conceive the garlands as proceeding out of these corner tubes, there is a center point at which two converging garlands meet. This point is occupied by a star-shaped flower, such as the one directly under the south archangel (fig. 41). Another, incompletely preserved, flower remains at the apex of the bema arch (fig. 24). The flower under the archangel has a center of turquoise glass, four trefoil petals in red glass and terracotta, and four pointed gold petals. A similar flower occupies the apex of each of the five windows of the apse.

The window borders are of similar design, except that the horizontal band at the base of the windows (it is preserved in its entirety under window No. 3, and in part under window No. 2),¹⁵ being only about 0.25 m. wide, has the sheaf without the green leaves (figs. 18, 19, 23, 26). In windows 2 and 3 it is clearly seen that the vertical bands of border were made first, and the horizontal band next on a separate bed of plaster, with a straight joint on either side.

Given the considerable length of the garland borders, it is only natural that we should encounter in them some differences of detail. The most carefully executed stretch is at the base of the apse semidome, between windows 1 and 3 (fig. 22). The length of border between window No. 1 and the face of the apse (fig. 21) is of somewhat looser construction: the round flowers and pears

^{14a} In mosaic little remains of the convex border around the western edge of the bema arch, where it opens into the great eastern semidome of the nave; excepting at its lower ends, where the tube-like angle of the garland border turns upward, the border was geometric in form; its relation to the apse mosaics will be discussed below (pp. 132, 137f).

¹⁵ For the sake of convenience, we shall refer to the windows by number, counting from the north.

(which here have long stems) are not lined up, as elsewhere, in neat vertical rows, and there are no pomegranates. In spite of such inconsistencies, there is an undeniable uniformity both of technique and materials in all of the garland borders. Especially noticeable is the extensive use throughout the garlands and always in the same contexts of painted tesserae. In addition to the red and white outline, these occur in the ribbons that are looped round the corner tubes, in the pears, the pomegranates, the stems and in the small round berries. The latter appear to have been further touched up with red lead paint, as is also the case with the feet of the south archangel.

4. THE WINDOW SOFFITS (fig. 23)

The soffits of the five windows of the apse are covered with plain gold mosaic, except for a band of geometric ornament next to the marble window grilles. The ornamental band (width 0.27 m.) consists of X's alternating with diamonds (fig. 25). These motifs are placed on a background of dark blue glass. The X's, which are silver, have little crossbars near the end of each arm and a silver almond or teardrop between each arm. The diamonds are in red, gold, and green glass, and have a silver stepped motif attached to each side. The geometric border is separated from the gold ground of the window soffits by a double row of silver tesserae. No natural stones are used in the mosaic decoration of the soffits.

5. THE SOUTH ARCHANGEL

For the sake of convenience we shall refer to this archangel as Gabriel, in accordance with the Byzantine custom of depicting Gabriel on the left hand and Michael on the right hand of the Virgin in the apse of a church. Gabriel, clad in red buskins, tunic, and chlamys, is represented standing frontally, holding a staff in his right hand and a crystal globe in his left (fig. 41). The left shoulder, a little less than half of the halo, the upper part of both wings, and the top of the staff have been destroyed. Originally, the staff may have formed part of a labarum inscribed with the *trisagion*, as was the case in the Dormition Church at Nicaea.

Dimensions

Width of gold background from border to border	4.64 m.
Total height of figure excluding halo	4.90
Maximum width of figure	3.48
Diameter of halo	1.18
Height of head	0.66
Length of eyes	0.09
Length of mouth	0.08
Length of right foot from heel to toe	0.44
Diameter of globe	0.59

The Halo

The halo is outlined with four rows of red glass tesserae. The field of the halo is gold, set concentrically, with a very slight admixture of silver cubes.

The Head and Neck (fig. 43)

The archangel's abundant hair is gathered round the head in thick plaits and falls down the back of the neck, showing over the right collarbone. The lighter strands are in yellow glass at the top and on the right of the figure, and in yellow-green glass on the left. The darker strands are in olive, mat brown, and clear brown glass, and there are a few lines of black glass. High lights are provided by occasional lines of gold tesserae. Over the middle of the forehead the hair is arranged in a flower-like form. The contour of the hair is outlined against the gold of the halo by one or two rows of pale turquoise glass.

The hair is tied with a ribbon of white marble tesserae, its ends (only one end is preserved) fluttering behind the head.

The eyebrows, markedly arched, are in mat brown glass, the upper eyelids in black and mat brown glass, the lower eyelids in mat brown glass with a line of olive shadow underneath. The pupils of both eyes have been gouged out. The whites of the eyes have high lights in white limestone, the rest being in off-white milky glass.

The flesh tones used in the face and neck are fine-grained white marble, Proconnesian white marble, Proconnesian grey, cream marble (used very sparingly), and two or three tones of pink marble. Extensive use is made, furthermore, of off-white milky glass which has sometimes a bluish, sometimes a purplish tinge; this forms the right outline of the face, the left outline of the forehead, the pockets under the eyes, the area of light shadow to the left of the nose, etc. Olive glass is used for strong shadows to the left of the nose, round the eyes, the dimple under the nose, and for the shadow under the mouth, where it is mixed with lighter shades of glass and with pink marble. The tip of the nose and parting of the mouth are in deep red glass. Vermilion glass is used in the lips (in the lower lip it is mixed with pink marble) and one line of it forms the end of the chin. The nostrils are in black glass. No green or yellow-green occurs in the archangel's face.

The shadow under the chin is in olive and purple-brown glass. On the left side of the neck an effect like that of a cast shadow is obtained by a mixture of pink marble and yellow-green glass. This is the only part of the mosaic which may be called impressionistic; elsewhere the modelling, though relatively free, is nevertheless linear. The left collarbone is indicated by a shadow of yellow-green glass.

The Right Hand (fig. 44)

The upper line of the thumb and fingers as well as the lower line of the thumb muscle are in yellow-green glass. The lower line of the thumb and fingers is in mat brown glass. Each finger has two wrinkles on the second joint

in red glass. There are two odd, red glass cubes and one vermillion cube on the muscle of the thumb. The nails, not outlined, are in white Proconnesian marble. The flesh tones are in white Proconnesian marble, cream marble, and two tones of pink marble.

The Left Hand (fig. 45)

The shadow on the wrist, the upper line of the thumb (in two rows) and the lower outline of the hand are in yellow-green glass. The fingers and fingernails are outlined in deep red glass which also forms one wrinkle line below each nail. The lower line of the thumb and the upper line of the palm are in mat brown glass. The flesh tones are in white Proconnesian marble, cream marble, three tones of pink marble, and purple-grey granite. Apart from the heavy green outline, the flesh tones of the thumb (which is meant to be seen through the crystal of the globe) are the same as those of the rest of the hand.

The Feet (fig. 48)

The feet are shod in buskins, ornamented both on the heel and the toe with clusters of round and almond-shaped pearls done in white limestone. The buskins themselves are in two tones: the shaded parts are in deep red glass, the lighted parts in terracotta tesserae that were dipped in red lead paint. Either simultaneously with the making of the mosaic, or, more probably, at a later date, the terracotta cubes were further touched up with red paint which covers the interstices between them and is smeared over some of the red glass cubes. The toe of the left foot impinges on the trim of the garland border; the significance of this fact will be discussed below, on p. 140.

The Wings (figs. 46, 47)

The wings are outlined along the top and about two-thirds down the sides with two or three rows of turquoise glass. The general color scheme of the wings is the following: the upper and outer portions are in brown tones, the inner portion is in white, grey, and green tones. The bottom feathers are dark blue and black. The stone tesserae used in the wings are cut big, as they are also in the garments.

The inner (lighter) part of the wings is in grey Proconnesian marble lit with vertical rows of white Proconnesian marble. The tips of the feathers are here in turquoise glass shading off to light turquoise. The surface of the turquoise cubes has deteriorated.

In the outer (darker) part of the wings the following materials are used: yellow-green glass, purple-grey granite, khaki-brown granite, clear brown and mat brown glass (the two latter in the tips of the feathers). The granite has in many places worn off, forming grooves in the surface of the mosaic.

The long, bottom feathers are in blue glass mixed with black glass.

The treatment of both wings is identical, except that the left wing has patches of black glass filling the ends of the brown feathers in the darker outer area, thus producing a more shaded effect.

The Tunic

The archangel's lower garment is a beltless tunic (*divitision*),¹⁶ presumably made of silk. It is to be seen in the sleeves, in the narrow slit near the left edge where the chlamys is open, and at the lower right. The sleeves are tight-fitting over the wrist and forearm, but expand to a considerable width over the elbow. Sewn on to the tunic are a number of elements decorated with gold thread and embroidery, viz. the collar, hem, and cuffs.

Except for the high lights on the folds of the right sleeve, which are made of grey Proconnesian marble, the entire tunic is in glass tesserae. The dominant color is light turquoise; the shadows and fold lines are in turquoise, cobalt blue, and dark blue. The cuffs are plain gold with fold lines in mat brown glass. The lower outline of the left cuff, three rows wide, is in clear brown glass.

The gold collar is largely hidden by the chlamys, except for the patch over the right shoulder. This is decorated with a diamond design, only half of which shows, containing two concentric circles and a little square attached to each side. The design as well as a double border at the bottom of the patch are in two rows of red glass.

The hem of the tunic is gold decorated with a rinceau in red glass. Within each convolution of the rinceau is a triple leaf with two tendrils curving downward. The falling fold of the chlamys divides the hem into two unequal parts, and these parts do not completely match. The smaller section on the angel's right is 0.59 m. high; the section on the left is 0.565 m. high. Furthermore, the upper and lower edging of the hem are different in the two sections: on the right, the upper edging consists of two lines of red glass separated by a band of gold three rows wide, the lower edging of two lines of red separated by five rows of gold. The left section has no red in the upper edging, but, instead, one row of mat brown glass and above it one row of gold; the bottom edging has two lines of red separated by three rows of gold. On the angel's left the tunic is meant to have a lateral slit at the bottom. This slit is edged with a gold stripe terminating in a circular *segmentum* (diameter 0.27 m.) of which only one half is visible. The *segmentum*, like the shoulder patch, is decorated with a diamond containing a circle. To each side of the diamond is attached a little square. This design is in single rows of red glass.

The Chlamys

The chlamys, which is ankle-long, is decorated with two gold *tablia* and is clasped with a fibula over the right shoulder. The left *tablion* covers the breast, while the right one is hidden behind the figure except for a narrow strip that appears beneath the right elbow.

¹⁶ On this garment, see especially D. F. Beljaev, *Byzantina*, II (St. Petersburg, 1893), p. 50ff.; N. P. Kondakov, *Očerki i zametki* (Prague, 1929), pp. 223, 232. Note that in the ninth century the *divitision*, chlamys, and red buskins constituted the emperor's official costume. Cf. the account of the coronation of Basil I: καὶ οἱ πραιπόσιτοι ἐνέγκαντες διαίτησιον [sic] καὶ τζαγγία ἐνέδυσαν τὸν Βασίλειον, ὅστις βαλὼν [= "having put on," not *abiecta chlamyde*] τὴν χλαμύδα ἔπεσεν εἰς τοὺς πόδας τοῦ βασιλέως [Michael III]: Georgius Monachus, along with Theophanes Cont., Bonn ed., p. 832f.

The *tablia* are gold with a slight admixture of silver cubes, while the rest of the chlamys is done entirely in local stones cut into rather large tesserae (up to 1 cm. square), namely, white Proconnesian marble for the high lights, grey Proconnesian marble, two kinds of decayed granite, one purple-grey, the other khaki-brown, and finally a slate-grey stone with a thin white vein (known locally as Beykoz stone, after the village of Beykoz on the Asiatic shore of the Bosphorus). Fold lines usually change color when they go across the *tablia*: grey stone becomes red glass; purple-grey in one place turns to khaki-brown, while in others it does not change color. Both kinds of granite have been eroded, forming grooves in the surface of the mosaic.

The fibula is outlined in Beykoz stone. Its center is in white marble.

The Staff

This consists of five vertical rows of gold outlined on the angel's right with one row of red glass and three on the left. The lower tip of the staff (to a height of 0.29 m. from the bottom) was originally silver, but the heads of the cubes have largely disappeared exposing clear glass of a pale honey or greenish color.

The Orb (fig. 45)

The orb which the archangel holds in his left hand is outlined, starting from the outside, with two rows of dark blue glass and three rows of turquoise glass. Two wavy lines running across the middle of the globe are each in three rows of turquoise glass. All the turquoise glass has surface patina due to deterioration. The high lights in the upper half of the orb are in white Proconnesian marble. Immediately above the thumb is an elongated patch which appears to have been originally silver. All but a few of the silver heads have, however, fallen off, exposing clear glass of a pale greenish color. The rest of the orb is mostly in pale turquoise glass.

6. THE NORTH ARCHANGEL (figs. 50-52)

Only tiny portions of this archangel remain, namely: four feathers of the right wing, part of the left foot, part of the ornamented hem of the tunic, the tip of the staff, the tip of one feather of the left wing, and, much higher up the arch, an insignificant fragment of the halo. The execution of these fragments is in all respects similar to that of the Archangel Gabriel. The buskin is in two shades of red, the lighted parts being in terracotta, the darker parts in red glass. The pearls on the toe of the buskin are in white limestone. The staff was in five vertical rows of gold, outlined with one row of red glass on the angel's right and three on the left. The tip of the staff, to a height of 0.19 m., was in silver, but the heads of most of the silver tesserae have flaked off, exposing clear glass. The feathers are in clear brown, pale turquoise, turquoise, dark blue, and black glass. The hem of the tunic is gold with a double, red line at the bottom and traces of a rinceau pattern, also in red. For the gold background, see *infra*, p. 137.

7. THE SOFFIT OF THE BEMA ARCH

Except for the two archangels, the soffit of the bema arch was covered with plain gold mosaic, a large area of which has survived at the crown of the arch (fig. 54).¹⁷ This field of gold is delimited on the east side by a garland border and on the west side by a geometric border of which only four small fragments survive: one near the north springing of the arch to the left of the Archangel Michael (figs. 50, 51), the second and third near the apex of the arch (fig. 53), and the fourth slightly above the level of Gabriel's head (fig. 55). Owing to its fragmentary condition, this border was covered by the Fos-satis with a garland painted in oils.

Originally, the geometric border curved round onto the western face of the bema arch. The design was basically the same as the one in the windows of the apse, i.e., X's alternating with diamonds. The X's were gold, and each arm terminated in a trefoil. A heart-shaped motif, outlined with four rows of gold, filled the right angle between each pair of the X's arms. The diamonds had a wide, gold border within which was inscribed a circle; inside the circle was a stepped square in red glass. Attached to each side of the diamond was a semicircle outlined in silver, containing a gold stepped motif on a red ground. The over-all background of the design was dark blue, the cubes being rather widely spaced. The blue background was separated from the field of gold in the soffit of the bema arch by three rows of silver tesserae.

The very same kind of border occurs elsewhere in St. Sophia, a fact to which we shall return later (*infra*, p. 148). We may note meanwhile that the geometric border we have described is made exclusively of glass tesserae, namely, red, blue, and green, in addition to gold and silver.

8. COLOR CHART OF TESSERAE¹⁸

	<i>Virgin & Child</i>	<i>Archangels</i>	<i>Garlands</i>
<i>Metallic</i>			
1. Gold	yes	yes	yes
2. Silver	yes	yes	yes

¹⁷ Cut into the soffit is a circular hole extending vertically to a depth of 1.35 m. It was probably used for the suspension of a lamp.

¹⁸ It should be borne in mind that the materials used by the Byzantine mosaicist, whether stone or glass, were never of a completely uniform color. To take one example, Proconnesian marble is white and has a grey or blue-grey vein. Naturally, there is considerable variation both in the whiteness of the white and in the intensity and shade of the grey, not to mention the gradations between the two. It would be pointless and confusing, however, to list all the slight differences of shade that may be observed. What we can confidently say is that in the apse Proconnesian marble was consciously used for two values only, namely, white and grey. Other contributing factors in the appearance of stones are weathering and the effect of repeated plastering over and cleaning; while the smalts (the pigmentation of which was never mechanically uniform to start with) have undergone patination to varying degrees, this, as we have said, being especially the case with turquoise glass. In the following table, therefore, we have listed only those colors which, in our opinion, were deliberately used as such by the mosaicists. This explains the relatively limited number of entries in our list as contrasted, for example, with the color chart that has recently been drawn up for St. Sophia, Kiev, listing 177 shades: V. N. Lazarev, *Mozaiki Sofii Kievskoj* (Moscow, 1960), p. 144 ff.

	<i>Virgin & Child</i>	<i>Archangels</i>	<i>Garlands</i>
<i>Glasses</i>			
3. Deep red	yes	yes	yes
4. Vermilion	yes	yes	no
5. Yellow	yes	yes	no
6. Yellow-green	yes	yes	no
7. Light yellow-green	yes	no	no
8. Light green	yes	no	no
9. Leaf green	yes	no	yes
10. Blue-green	yes	no	yes
11. Turquoise	yes	yes	yes
12. Pale turquoise	yes	yes	yes
13. Cobalt blue	yes	yes	no
14. Dark blue	yes	yes	yes
15. Black	yes	yes	no
16. Light olive	yes	no	no
17. Olive	yes	yes	no
18. Purple-brown	yes	yes	no
19. Clear brown ¹⁹	yes	yes	no
20. Mat brown ²⁰	yes	yes	no
21. Milky off-white	yes	yes	no
<i>Stones</i>			
22. White limestone	yes	yes	yes
23. Proconnesian white marble	yes	yes	yes
24. Proconnesian grey marble	yes	yes	no
25. Fine-grained white marble	yes	yes	no
26. Cream marble	yes	yes	no
27. Pink marble (3 shades)	yes	yes	no
28. Purple-grey granite ²¹	no	yes	no
29. Khaki-brown granite	yes	yes	no
30. Slate-grey (Beykoz) stone	no	yes	no
31. <i>Terracotta</i>	no	yes	yes
<i>Painted cubes</i>			
32. Red lead (vermilion or pink)	yes	yes	yes
33. Burnt umber	no	no	yes

¹⁹ Obtained by turning gold tesserae on their sides. The color of the clear glass varies considerably from amber to greenish brown. The gold heads are occasionally visible; at times, however, the mosaicists appear to have used trimmings that had no gold leaf on them from the edges of gold glass sheets.

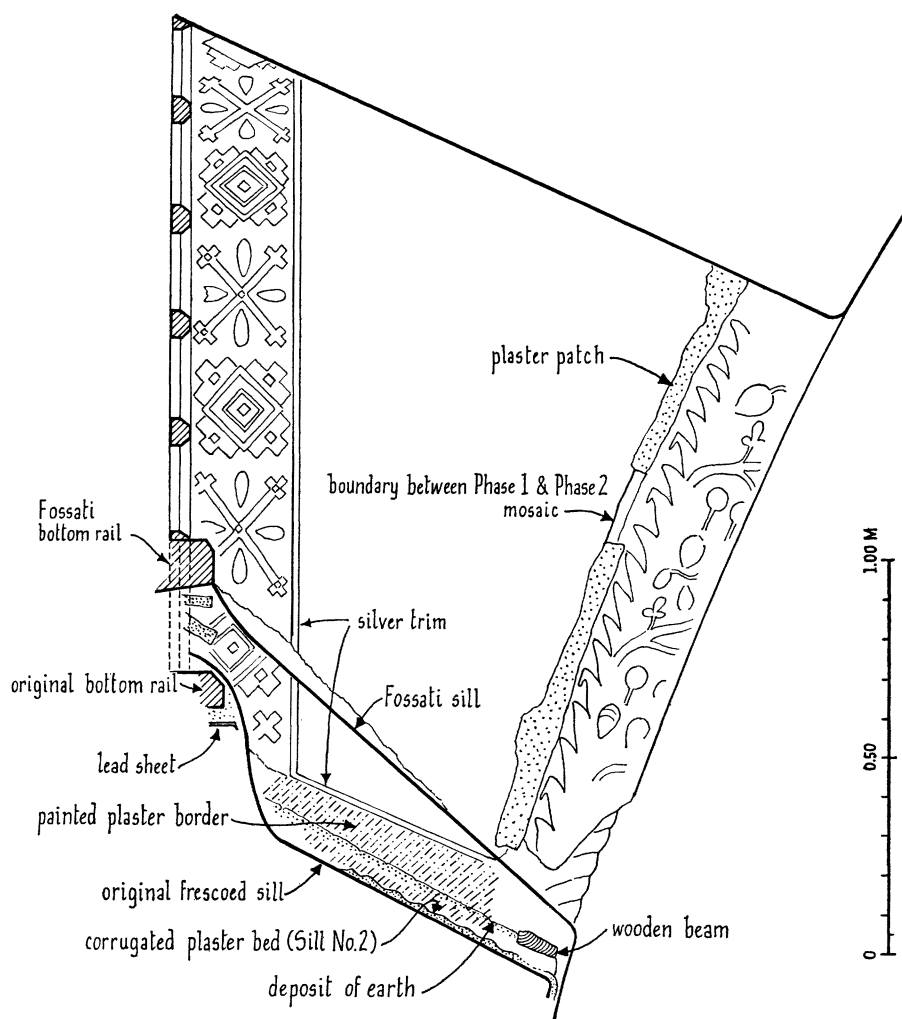
²⁰ Obtained by turning gold cubes upside down. The melted glass seems to have been poured on a sandy surface so that when it hardened its underside acquired a mat, slightly pitted appearance.

²¹ Both Nos. 28 and 29 are weathered granites consisting mainly of quartz, feldspar, and mica. We are indebted for this identification to Mr. R. J. Davis of the British Museum (Natural History).

CHRONOLOGICAL SEQUENCE OF THE MOSAICS

The mosaics we have described belong to two periods and, as far as we could ascertain, to two periods only. With a view to establishing certain criteria which distinguish the work of the first period from that of the second, we may start our investigation with the windows of the apse, all five of which exhibit more or less the same conditions. First, however, a few words should be said about the form of the windows.

The steeply pitched sills which we found in all five windows dated from the Fossati restoration (figs. 26, 27, and text fig. A). A cutting made by us in the central window revealed the original sill which was considerably lower and less inclined than the Fossati sill. Subsequently, all five sills were lowered by us to their original level. In the course of this operation several interesting facts came to light.



A. Central Window of Apse Section, looking South

The marble window grilles are unquestionably of Justinianic date and bear the following masons' marks: ⚡ in windows 1 and 4; ⚡ in windows 2 and 3 (twice in each case); and ⚡ in window 5 (twice).²² Originally, however, the grilles had one further row of lights at the bottom, which Fossati's workmen cut off, and the horizontal bottom rail was correspondingly lower (fig. A). As a result, the apse must have admitted more light in Byzantine times than it does today.²³ The stumps of the vertical bars pertaining to the bottom row of lights have survived in windows 3 and 4. A memento of the Fossati alterations, duly dated, is inscribed on the grille of window No. 2.²⁴

The original sill was neatly plastered and painted yellow ochre with a black border all round it (marked 1 in fig. 26). Over this was later laid a corrugated bed of plaster containing a good deal of chopped straw (figs. 23, 27). The treatment of this bed is similar to that of a preliminary coat of plaster intended for mosaic.²⁵ Although no tesserae were found here, it is possible that this sill (which we may call sill No. 2) was once covered with gold mosaic which would have reflected a considerable amount of light onto the figure of the Virgin in the conch. Overlaying sill No. 2 was a deposit of accumulated earth having a crackled surface due to the weight of the filling that was later laid upon it. On top of this accumulation we found several fragments of window glass, two of which had a raised rim and clearly belonged to a circular bull's eye. It should be noted that in 1710 Loos showed the apse windows and, indeed, practically all the other windows of the building as having circular lights.²⁶ Since the marble grilles (which have square lights) could not have been moved from their original positions, we may suppose that there were double windows in Turkish times. The third and last sill dates from the 1847 repairs. A wooden beam was now laid across the inner opening of the window to contain the mass of broken bricks and plaster which Fossati's workmen used as a filling to raise the level of the sill at a steeply inclined plane.

When we proceed to examine the mosaics in the window soffits, we notice in the first instance that the area of plain gold which fills the greater part of each soffit is integral with the geometric border next to the marble grille (figs. A and 25). The two, as we have said, are separated by a double row of silver tesserae. This silver trim continues below the level of the Fossati sill, and turns at an obtuse angle to run parallel to sill No. 1. The narrow strip between the original sill and the horizontal silver trim is in some places unset plaster

²² Identical or similar marks occur in other sixth-century contexts: ⚡ elsewhere in St. Sophia (Antoniades, *op. cit.*, I, fig. 29); ⚡ and ⚡ in the Binbirdirek cistern. On the latter, see A. Choisy, *L'art de bâtir chez les byzantins* (Paris, 1883), p. 172; *id.* in *Revue archéologique*, N.S., XXXI (1876), p. 245; P. Forchheimer and J. Strzygowski, *Die byzant. Wasserbehälter von Konstantinopel* (Vienna, 1893), p. 249; K. Wulzinger in *BZ*, XX (1913), p. 463 ff.

²³ The same holds good of the eastern semidome whose windows were filled up during the Fossati restoration to a height of about 0.50 m. on the interior side (see fig. 40, top right corner).

²⁴ After a number of letters which we are unable to interpret, the inscription reads: ... OM8PA8 (? Turkish *ömürlü* = having a <happy> life) XATZIMHXAAIΣ MEPEMETI (Turkish *meramet* = small repair): ETOΣ: 1847.

²⁵ It exhibits, however, the peculiarity that small chips of clear glass were embedded in the ridges formed by the plaster.

²⁶ Mango, *Materials*, fig. 90; cf. figs. 7, 22, 40, 41, 49, 56, 91.

painted red, while in others there are two to four rows of blue glass tesserae running underneath the silver trim and continuing, as it were, the blue background of the geometric border (figs. 28, 29). When, however, we come to the garland border on the inner reveal of the windows, there is clear evidence of disturbance. Examining more closely the juncture between the gold ground of the soffits and the garland, we find that here, too, there originally existed a silver trim: portions of it still survive in the south soffits of windows 2 and 5 and in the north soffit of window 1. In the latter as well as in the north soffit of window 2 there are, within the silver trim, small areas of dark blue tesserae which evidently pertained to the background of an earlier border, later replaced by the garland: this is clearly seen in the lower left corner of figure 28 where the dark blue tesserae form a vertical band five rows wide. The earlier border was surely geometric like the one partially preserved in the semidome of the northeast exedra, in the second window, counting from the apse (fig. 39). We are confronted, therefore, with the work of two periods: the geometric border next to the window grilles and the gold ground of the soffits belong to Phase 1; the garland border on the inner reveal to Phase 2.

We may further note that Phase 1 mosaic is associated with sill No. 1, and Phase 2 mosaic with sill No. 2. The corrugated bed of plaster, which is all that remains of sill No. 2, is indeed integral with the plaster rendering underneath the horizontal garland border which runs at the base of the central window (this, as we have said, being the only window that preserves the horizontal garland border in its entirety). Since there is no evidence that Phase 1 mosaic replaces an earlier decoration (or, for that matter, that sill No. 1 is not the first sill), there is a *prima facie* case for thinking that it pertains to Justinian's time.

The technical characteristics of Phase 1 mosaic in the window soffits are the following: The gold ground is made up of tesserae 5 or 6 mm. square, set very close in neat rows so that there are about 215 to 225 tesserae per 10 cm. square. The painting on the setting-bed is red underneath the gold ground. There is an unusually high proportion of triangular tesserae often fitted together in pairs in lieu of square tesserae.²⁷ There is *no* deliberate admixture of silver in the gold ground. The colored geometric design is made entirely of glass tesserae (red, green, and dark blue, in addition to gold and silver) to the exclusion of natural stone and terracotta. The colored cubes are cut rather larger (up to 1 cm. square) and set more loosely than the metallic ones. The ornamental borders are regularly separated from the gold ground by a silver trim.

Bearing these characteristics in mind, we may proceed to examine the mosaics in the semidome of the apse. Here the presence of Phase 1 work is seen to be limited to the area between the windows, as shown in figures 17-20 and figures B and C. In each interfenestration (if we may coin such a word) Phase 1 mosaic starts more or less level with the interior line of the window

²⁷ This is apparently also the case in the sixth-century mosaics of the narthex. Whittemore speaks of "instances where the workman in following his pattern even assembled the fragments of each broken cube before setting it in its position": *The Mosaics of St. Sophia . . . Preliminary Report on the First Year's Work* (1933), p. 12.

sills and it never goes much above the crowns of the windows. In most places there is a suture dividing Phase 1 from later work;²⁸ where no suture is clearly discernible, it is nevertheless possible to distinguish Phase 1 work (we are concerned here exclusively with gold ground) from later gold mosaic by the frequent use of triangular tesserae in the former and by the presence of an admixture of silver tesserae in the latter. With regard to the size and closeness of the tesserae, no distinction can be drawn between the two phases. Probable boundaries of juncture are indicated by a broken line in figs. 17–20. It is worth noting that no Phase 1 gold mosaic seems to have survived between the end windows (Nos. 1 and 5 respectively) and the face of the apse semidome.

The original border round the window openings—this, as we have said, was surely geometric—was once more trimmed with two rows of silver tesserae against the gold ground of the semidome. This silver trim was almost entirely removed when the garland borders were made, but small traces of it remain on the south side of window No. 2 (fig. 18).

When we turn our attention to the soffit of the bema arch, we discover that the large area of plain gold mosaic at the crown of the arch shows all the characteristics of Phase 1 work. As we have said, this expanse of gold is delimited on the east side by one of the garland borders and on the west side by a geometric border of which only a few fragments survive. We can now make the following observations:

1. The geometric border is contemporary with the gold ground that fills the soffit of the arch (cf. figs. 53, 55). The two are, once more, separated by a line of silver which in this case is three rows wide. The border itself, like the one in the window soffits, is made exclusively of glass tesserae, the colors used being also the same (red, blue, and green, plus gold and silver).

2. The garland border on the east side of the arch was clearly cut into Phase 1 gold ground. The juncture between the two elements forms a somewhat ragged line: in places Phase 1 gold comes right up to the red outline of the garland border, in others it was cut further back and the intervening space filled with gold cubes.

The presence of Phase 1 gold background can also be detected round the figures of both archangels, the areas in question being indicated in figs. 42, 51, 52. It would seem that a rough sketch of the archangels was made on the pre-existing gold ground, after which the necessary space was cut out for the insertion of the new mosaics. A few stretches of Phase 1 silver trim have survived in places, namely, a run 0.60 m. long to the right (west) of Gabriel, starting 2.50 m. above the cornice (fig. 47); another run, 0.17 m. long, to the left of Gabriel, 1.90 m. above the cornice (fig. 46), and, on the north side of the soffit, a horizontal stretch, only 0.10 m. long, embedded in the upper red outline of the fragmentary garland (fig. 51).²⁹

²⁸ In these sutures we have often found a black deposit. This has been analyzed by Miss Joyce Plesters of the National Gallery, London, who kindly informs us that it is neither a pigment nor an adhesive, but in all probability candle soot that was wafted up from the ground. We have not found this deposit in seams dividing separate areas of Phase 2 work.

²⁹ This last fragment of silver trim, together with a small area of gold mosaic next to it, would appear to be a repair patch of a date intermediate between Phase 1 and Phase 2.

It is particularly instructive to examine the reveal of the bema arch to the left (west) of the Archangel Michael (fig. 51). As on the opposite side, there was a horizontal run of the garland border under the archangel. On reaching the left corner of the panel, the garland forms a right angle and proceeds vertically upwards; but at a height of 1.94 m. above the cornice the garland breaks off. Next comes a strip of unset plaster, about 5 cm. wide, which was smeared with black paint in Turkish times. This plaster is of a piece with the garland border, and it was trowelled upwards to meet the chopped off edge of the geometric border which now survives to a height of only 0.50 m. Above this we encounter a plaster repair, probably of Turkish date,³⁰ but previous to the Fossati restoration. There can be no doubt, once again, that the garland represents a later stage than the geometric border which was left *in situ* above the tubular motif at the springings of the arch.

Setting aside those areas of mosaic that we have ascribed to Phase 1, all the other mosaics in the apse and bema arch are of the same period, namely Phase 2. We are led to this important conclusion by the following observations which we shall examine in turn:

1. All of the figure mosaics are homogeneous. In spite of a number of inconsistencies in the throne of the Virgin (not surprising in so large a composition, which was probably executed by several hands), there is no sign whatever of any later alterations.

2. All of the garland borders are contemporary. As we have already pointed out, they exhibit a remarkable uniformity in technique and in the use of materials. We refer in particular to tesserae dipped in burnt umber and red lead paint which occur extensively throughout the garlands and, as we have said, always in the same context. This may have been done in the case of the red-and-white outline with a view to economizing on red glass tesserae, and, in the body of the garland with a view to obtaining a lighter value of red without using vermilion glass, which was evidently in very short supply. It must be borne in mind that the use of tesserae dipped in paint is rather uncommon in Byzantine mosaics.³¹

3. The garlands are contemporary with the inscription on the face of the apse. In fact, the garland forming the inner surround of the inscription was set in the same bed of plaster as the inscription itself (fig. 30). The garland

³⁰ The plaster is painted a mustard color and has a black border along the west edge of the bema arch. The reason for thinking that this repair is of the Turkish period is that it fills up the space between the two preserved fragments of the Archangel Michael and extends upwards above these fragments: had the repair been made in the late Byzantine period (say after the collapse of 1346), some attempt would probably have been made to complete, if only in paint, the damaged parts of the archangel. Besides, as we have said, Michael appears to have been preserved in his entirety as late as 1710.

³¹ Other instances known to us are: in St. Sophia itself in the room off the southwest corner of the gallery, in the panel above the Imperial Door, the bishops of the north tympanum, the pendentive corner of a domical vault in the south gallery, and in the panel of the southwest vestibule (see *supra*, note 9)—all of these being of the ninth or tenth century; also in the fourteenth-century repair of the dome (white marble cubes dipped in burnt umber paint). Outside Constantinople: Centcelles in Spain (see T. Hauschild and H. Schlunk, "Vorbericht über die Arbeiten in Centcelles," *Madridrer Mitteilungen*, II [1961], p. 140), Kanakaria, Kiti, and Livadia in Cyprus, Tsromi in Georgia (Amiranašvili, *op. cit.*, p. 24).

forming the outer surround was set separately, after the inscription had been completed, but evidently as part of the same continuous operation. This is quite evident at the tail-end of the inscription, where the gold background of the letters laps over the re-entrant angle between the face of the semidome and the soffit of the bema arch. The suture between the two stages of the work follows here the tops of the letters (fig. 14), at which point the gold background begins to curve round onto the soffit of the bema arch. The strip of gold background above the tops of the letters is integral with the outer garland, and was set so that the gold cubes should line up with the somewhat erratic rows of gold in the main part of the background. On the opposite side of the semidome, where the inscription begins, the boundary between the two successive stages coincides with the outer red border of the inscription (fig. 13). Note, incidentally, that both the outer and the inner red border are made of marble tesserae dipped in burnt umber paint.

4. The garland forming the inner surround of the inscription was made subsequent to, but in close conjunction with, the over-all gold background of the apse semidome. The sequence of work appears to have been roughly as follows. The over-all gold background of the semidome was made first and brought to an uneven line some 0.50 m. away from the forward edge of the semidome (figs. 3, 15, 16). In some places this provisional termination of the background was outlined with a row of the same gold cubes. Next, the garland was made and trimmed along its eastern edge with three rows of marble tesserae dipped in red paint. Two rows of white marble tesserae were then set next to the red trim, and the intervening strip between this white line and the previously made background of the semidome was filled with gold cubes in such a way as to pick up the lines of tesserae in the over-all background. As a result, a suture is observable, running rather unevenly at a distance varying from 2 cm. to 30 cm. east of the white line. The character of the gold mosaic on both sides of the suture is, however, identical, and it contains the same proportion of silver cubes. In order to establish this sequence of work, we cut two test holes in the north half of the semidome, next to areas where the mosaic was missing. In both instances we were able to observe *first*, that the boundary lines under discussion affect only the setting-bed, but not the two lower coats of plaster which appear to be continuous throughout, thus showing that we are dealing here with successive stages of one continuous campaign of work; *second*, that the break in the setting-bed corresponding to the suture in the gold background shows an underlap on the side of the over-all background and an overlap on the side of the inserted strip, thus confirming our view that the former was done first and the latter second; and *third*, that there is another break in the setting-bed between the red and the white trim of the garland border, showing that the two were done separately. The white trim is, however, integral with the inserted strip of gold.

The above observations apply only to the area of the semidome that is above the crowns of the windows. The suture in the gold background seems to disappear, on the south side of the apse, a little below the top of window

No. 5, and the space between that window and the garland on the edge of the semidome is filled with a uniform area of gold (fig. 20).³² The same appears to have been the case on the north side of the apse, but the loss of large areas of mosaic in that particular spot does not allow us to determine exactly how far down the suture extended (fig. 17).

5. The gold ground forming the immediate surround of the Virgin and Child was made before the over-all gold ground of the apse semidome. Removal of the two large plaster patches to the right and left of the Virgin gave us an opportunity to examine in cross-section the points at which the suture surrounding the entire figure runs into these areas of loss (figs. 31, 36). Three out of the four points examined (the fourth being inconclusive) gave unmistakable evidence that the bed of plaster pertaining to the gold background immediately surrounding the figure formed an underlap which was overlaid by the bed of plaster belonging to the over-all gold background (figs. 32–35, 37, 38). This observation applies not only to the setting-bed, but also to the intermediate bed; only the first layer, applied directly over the brickwork, appears to extend unbroken under both parts of the background.

This completes the chain of evidence. Since the Virgin and Child was made prior to the general gold ground of the semidome, which was made before the garland border on the lip of the semidome, and since this garland border was made simultaneously with the ninth-century inscription (for the date of the inscription, see *infra*), it follows that the Virgin must have been made before—even if only a very short time before—the inscription.

This conclusion accords with our observations on the mosaic of the Archangel Gabriel. Here, too, it is clear that the figure was made before the garland border that runs horizontally under it. The archangel's left foot cuts into the upper red outline of the garland border, and upon close examination we discover that the rows of terracotta tesserae forming the red line dip slightly down in an effort to accommodate the archangel's toe (fig. 48). Moreover, the archangel's left foot had already been outlined with one row of gold tesserae, and a patch of gold ground had been set to the spectator's right of it—perhaps, indeed, all round the toe. Owing to a slight miscalculation, the upper red outline of the border was drawn about an inch too high. The artisan making this outline, probably working from east to west, came upon the archangel's toe and may have had to remove some gold cubes that had previously been set to the left of the toe. But then he probably realized that the archangel's buskin and the red border he was working on were very nearly of the same color. In order to differentiate between the two, he retained the gold outline of the toe and even the small patch of gold to the right of it, although the latter cut into the red border.

Setting aside all discussion of artistic style and iconography, we may add some further considerations which confirm our findings.

³² As shown in figure 20, there is a further seam just to the right of window 5. This probably delimits the patch of setting-bed plaster which was laid for the making of the garland surround of the window.

As we have noted, silver tesserae were deliberately mixed into the gold background of Phase 2 (not of Phase 1) work, the purpose being, presumably, to obtain a lighter, less brassy value of gold. To the best of our knowledge, this technique was used at Constantinople from about the eighth century until the end of the tenth. Whereas it is not found in the mosaics of St. Sophia that may reasonably be attributed to the sixth century, it is found in the apse of St. Irene (presumably eighth century),³³ in the entire group of mosaics in St. Sophia that belongs to the late ninth or early tenth centuries, namely, the panel over the Imperial Door,³⁴ the portrait of the Emperor Alexander,³⁵ and the bishops in the north tympanum, as well as in areas of ornamental mosaics of the same period; finally, this technique occurs in the mosaic of the southwest vestibule which is probably of the late tenth century.³⁶ We have not found any silver in the gold backgrounds of later mosaics, such as the imperial portraits of the eleventh and twelfth centuries, the Deisis in the south gallery, or in the mosaics of Fethiye Camii and Kariye Camii.

In the second place, there is in all the mosaics we have ascribed to Phase 2 an undeniable consistency in the use of materials. We have already referred to the presence in both figures as well as in the garlands of tesserae that were dipped in red paint. Milky off-white glass, a most unusual material, occurs in the faces of both the Virgin and the archangel. Vermilion glass—once more a scarce material—is used in the same sparing manner and to produce the same effects in the heads of the archangel, the Virgin, and the Child. It is also found in the mosaic of St. John Chrysostom in the north tympanum, in the mosaic panel of the southwest vestibule, and in the fragmentary mosaics in the chapel of the southwest buttress.³⁷ The absence of green shadows in the archangel's face is, of course, deliberate, with a view to producing an effect of ethereal pallor; but green glass is used in his neck and hands. Decayed granite of a grey-brown or khaki-brown color (a poor-grade material rather unsuitable for mosaic work) is used extensively both in the archangel's garments and in the Virgin's throne.

The heads of the archangel and the Virgin are closely related in modelling, the shape of the oval, the drawing of the eyes and mouth. The proportion of the head to the rather large and heavily outlined nimbus is the same in both cases. There is also a close similarity in the drapery folds, especially those that are rectilinear and terminate in little hooks: compare the bottom part of the Virgin's stola with the archangel's *tablion*. We may quote further instances of such folds in the mosaic above the Imperial Door (Christ's garments), in the figure of St. Ignatius Theophoros in the north tympanum, in the tenth-century reliquary of the Sancta Sanctorum in Rome,³⁸ etc.

³³ W. S. George, *The Church of St. Eirene at Constantinople* (Oxford, 1912), p. 47.

³⁴ Whittemore, *The Mosaics of St. Sophia . . . Preliminary Report on the First Year's Work*, p. 22.

³⁵ P. A. Underwood and E. J. W. Hawkins in *Dumbarton Oaks Papers*, 15 (1961), p. 194. Here the proportion of silver is as much as 30 per cent.

³⁶ Whittemore, *The Mosaics of St. Sophia . . . Second Preliminary Report*, p. 42.

³⁷ Photographs of these mosaics are reproduced in Mango, *Materials*, figs. 36–38.

³⁸ Reproduced, e.g., by O. Demus in *Dumbarton Oaks Papers*, 14 (1960), fig. 31 facing p. 119.

TEXTUAL EVIDENCE

Mediaeval sources contain very little direct information on our mosaics. An attempt to collect and interpret the textual evidence has previously been made by one of us,³⁹ but the conclusions expressed on that occasion are in need of correction. We shall, therefore, proceed to review the evidence once again.

The first of the relevant texts is contained in the *Pilgrimage* of Antony, archbishop of Novgorod, who visited Constantinople in 1200. He says that the painter Lazarus "for the first time represented in Constantinople, in the sanctuary of St. Sophia, the Holy Mother of God holding Christ, and two angels."⁴⁰ Lazarus flourished in the first half of the ninth century and we shall have more to say of him later.

The second text requires lengthier analysis. It is a sermon of the Patriarch Photius delivered in St. Sophia on March 29, 867.⁴¹ In the extant manuscripts this sermon is entitled "Of the same most-blessed Photius, Patriarch of Constantinople, homily delivered from the ambo of the Great Church, on Holy Saturday, in the presence of the Christ-loving Emperor [*lege* Emperors], when the form of the Theotokos had been depicted and uncovered." The homily was indeed delivered, as is made clear by its text, in the presence of the Emperors Michael III and Basil I, and it deals with two noteworthy achievements, or triumphs, of the Orthodox cause. The first of these achievements was the conversion of a large body of heretics, the so-called Quartodecimans. The second, which the speaker regarded to be of far greater importance, was the uncovering or unveiling of an image of the Virgin and Child. Indeed, this image symbolized the definitive defeat of the Iconoclast heresy and the ceremonial inauguration of an Orthodox era: as the orator expresses it, "If one called this day the beginning and day of Orthodoxy (lest I say something excessive), one would not be far wrong."

It is made clear that until that time St. Sophia had remained deprived of representational images: its "visual mysteries" had been scraped off by the Iconoclasts, and "it had not yet received the privilege of pictorial restoration" (τῆς γὰρ εἰκονουργικῆς ἀναστηλώσεως οὐπω ἀπειλήφει τὸ δικαίωμα). The interior of the Great Church had looked melancholy, disfigured by the scars of heresy, shorn of its glory. But now that the image of the Theotokos had been restored, raised from the depths of oblivion, the images of the saints would rise in like fashion. In other words, an entire iconographic cycle was under execution or being planned. The sermon concludes with the wish that the two emperors should "consecrate the remainder of the church, too, with holy images."

It must be admitted that Photius does not specify the location of the newly unveiled image of the Virgin, nor does he say that it was a mosaic. In describing

³⁹ BZ, XLVII (1954), p. 395 ff.

⁴⁰ Ed. Kh. Loparev, *Pravoslavnyj Palestinskij Sbornik*, XVII, 3 (St. Petersburg, 1899), p. 35: *toi pervjee napisal vo Carjegradje vo svjatjei Sofii vo oltari svjatuju Bogorodicu der'zašću Khrista, i dva angela.*

⁴¹ Ed. S. Aristarches, Φωτίου . . . λόγοι καὶ ὁμιλίας, II (Constantinople, 1900), p. 294 ff.; new ed. by B. Laourdas, Φωτίου ὁμιλίας (Thessaloniki, 1959), p. 164 ff.; English trans., *The Homilies of Photius Patriarch of Constantinople* (Cambridge, Mass., 1958), p. 286 ff.

it, he speaks of "colors" (τοῖς χρώμασιν) and "the art of painting" (ζωγράφος τέχνη),⁴² from which some scholars have concluded that the image was a painted one.⁴³ Furthermore, the expressions he uses in speaking of the image appear at first sight somewhat inappropriate to the mosaic that is now in the apse. He says that the Virgin ἀκίνητος ἕστηκε,⁴⁴ which could be rendered either "stands motionless" or "is set up motionless;" and that the Christ Child was "reclining as an infant" (ὡς βρέφος ἀνακλινόμενον).⁴⁵ Taking these expressions in their literal sense, one of us has previously suggested that Photius was referring not to a seated Virgin, but to a standing Hodegetria holding a reclining Infant in her arms, a type that was in fact used in the ninth century.⁴⁶ Such an interpretation is not, however, mandatory, and it has rightly been pointed out that Photius' language is not inconsistent with the mosaic in the apse.⁴⁷

The problem can now be formulated by means of the following alternatives:

1. Photius is indeed speaking of a mosaic in the apse, but this was an earlier mosaic which was later replaced by the one now in existence.
2. Photius is speaking not of an image in the apse, but either, i) of a mosaic that was elsewhere in St. Sophia or, ii) of a portable icon.
3. Photius is speaking of the very mosaic that is now in the apse.

The first alternative can be immediately ruled out in view of the fact that the existing mosaic in the apse is not later than the inscription commemorating the restoration of images by "pious emperors."

Alternative 2(i) can also be excluded. The only other mosaic of the Virgin that may be considered in this connection was at the crown of the great western arch. This mosaic was, however, made by the Emperor Basil I after the earthquake of January 9, 869.⁴⁸

Alternative 2(ii) is equally unacceptable. If all that happened on March 29, 867 was that a portable icon of the Virgin had been placed somewhere in St. Sophia, then Photius is guilty of the wildest hyperbole. There is yet a further difficulty: if Photius was prompted to such lofty flights of rhetoric by the presence of a portable icon, are we to assume that the apse mosaics had already been made by 867 or that they had not yet been made? If we assume that they were already in existence and had been put up, say, around 855,⁴⁹ then Photius' homily ceases to make any sense at all. If, on the other hand, we suppose that the redecoration of St. Sophia with mosaics was begun after 867, we only create a further and quite unnecessary difficulty. It is remarkable enough that the first figurative mosaics of St. Sophia should have been made no sooner than twenty-four years after the Feast of Orthodoxy (843) without further protracting the length of this hiatus.

⁴² Ed. by Aristarches, II, p. 299; English trans., p. 290.

⁴³ E.g., S. Šestakov in *Vizant. Vrem.*, IX (1902), p. 537f.

⁴⁴ Ed. by Aristarches, II, p. 306; English trans., p. 295.

⁴⁵ Ed. by Aristarches, II, p. 299; English trans., p. 290.

⁴⁶ *BZ*, XLVII (1954), p. 400.

⁴⁷ R. J. H. Jenkins in *BZ*, LII (1959), p. 107.

⁴⁸ See Mango, *Materials*, p. 77.

⁴⁹ So Grabar, *L'iconoclasme byzantin*, loc. cit. (*supra*, note 3).

Thus, we are inevitably led to the third alternative. Photius' homily must have been delivered upon the completion of the Virgin and Child that is still extant in the apse. In other words, both the mosaic of the Virgin and, most probably, the mosaics of the two archangels were completed in 867. The "pious emperors" mentioned in the commemorative inscription are Michael III and Basil I.

We may now return to the statement made by Antony of Novgorod and consider whether our mosaics could be attributed to the painter Lazarus. First, however, let us be clear about the intrinsic worth of this statement: since Antony is merely reporting something he was told in 1200, he has as much claim on our credence as a present day tourist explaining, on the authority of the local *cicerone*, why the Blue Mosque has six minarets. What we know about Lazarus from more or less contemporary sources is this:⁵⁰ He was of Chazar extraction and took up both painting and the monastic life at an early age.⁵¹ An outspoken critic of the Emperor Theophilus (829-42), he was subjected to torture and imprisonment, but continued nevertheless painting icons. To punish the monk's obduracy, the Emperor ordered that the palms of his hands should be burnt with leaves of red-hot iron. Barely surviving this ordeal, Lazarus was released from prison at the instance of the Empress Theodora, and took refuge in the monastery of St. John *ton Phoberou* on the outskirts of Constantinople.⁵² There he painted an icon of the Baptist, which was still extant in the tenth century and performed many cures. At the restoration of Orthodoxy (843) Lazarus defied the wishes of the government by refusing to countenance the "whitewashing" of the deceased Emperor's memory; he was nevertheless commissioned to execute the mosaic image of Christ above the bronze portal of the imperial palace, which he did with his own hands before 847.⁵³

Adorned with the title Confessor, Lazarus now took an active part in Church politics. His allegiance lay with the extreme "right-wing" monkish party, as was already made clear by his intransigent stand in 843. The Synaxarion informs us that he undertook a mission to Rome "on behalf of the doctrines and traditions of the Fathers and the apostles;" that he returned "in splendid fashion," and was once again sent to the same destination "because of the same matters," but that he died on the way. His body was brought back to Constantinople and buried in the monastery of Evandros outside the walls.⁵⁴

The "apostolic service" which Lazarus was delegated to perform was in fact to obtain the Pope's consent to the deposition of Gregory Asbestas, bishop of Syracuse.⁵⁵ He seems to have arrived in Rome in 855, soon after the

⁵⁰ Cf. *BZ*, XLVII (1954), p. 396f.

⁵¹ *Synaxarium eccl. Constant.*, ed. by Delehaye, col. 231²⁹.

⁵² On this monastery, see R. Janin in *Rev. des études byzantines*, XII (1954), p. 70ff.

⁵³ Theophanes Cont., Bonn ed., p. 102. On the restoration of the image of Christ above the Chalke gate, see C. Mango, *The Brazen House* (Copenhagen, 1959), p. 125ff.

⁵⁴ *Synax. eccles. Constant.*, col. 233f. On the monastery of Evandros, see Janin, *Géographie ecclésiastique de l'Empire byzantin*, I, 3 (Paris, 1953), p. 120.

⁵⁵ On the circumstances, see F. Dvornik, *The Photian Schism* (Cambridge, 1948), p. 19ff.

accession of Benedict III, and brought splendid gifts to the Pope, namely, a Gospel book, a chalice, two hangings of purple cloth, etc.⁵⁶ The gifts were received with thanks, but the Pope appears to have refrained from pronouncing judgment on Asbestas.⁵⁷ Lazarus' second mission cannot be dated so accurately, except that it must have taken place after 865; for in his famous letter to the Emperor Michael III, dated September 28, 865, Pope Nicholas I stipulates, *Mittuntur etiam de parte Ignatii archiepiscopi quidem Antonius Cyzici, Basilius Thessalonicae . . . atque Lazarus presbyter et monachus, qui dicitur Chazaris*.⁵⁸ Unless, therefore, the Pope was misinformed, Lazarus was still alive at the time. We do not know, however, when he set out for Rome or, indeed, whether he did so before or after the downfall of Photius (September 23, 867).

From the viewpoint of chronology, therefore, we cannot rule out the attribution of the apse mosaics to Lazarus. What makes this rather unlikely, however, is that he was one of the most determined adversaries of the Patriarch Photius. Gregory Asbestas was a close friend of the Patriarch's and was among the bishops chosen to consecrate him in 859; yet Lazarus, as we have seen, had gone to Rome to obtain Gregory's condemnation. And if, in 865, Pope Nicholas wished to have Lazarus plead Ignatius' case in Rome, this was surely because Lazarus, along with Antony of Cyzicus and a handful of other staunch Ignatians, was known for his attachment to the deposed Patriarch. Under the circumstances, it is difficult to believe that Photius would have chosen his declared enemy for a task in which he took such great personal pride, namely, the restoration of the mosaics of St. Sophia. How the attribution of the apse mosaics to Lazarus came about it is now impossible to say: perhaps simply because Lazarus was the most famous—in fact, the only famous painter of the period; on the other hand, it may have been a deliberate invention calculated to deprive Photius of the credit of having restored the mosaics.

For the sake of completeness, we may examine a few other mediaeval texts, although their relevance to the history of the apse mosaics is at best incidental. In the course of the eleventh century the interior of St. Sophia underwent a "facelifting." While the Emperor Romanus III (1028–34) gilded the capitals,⁵⁹ the Patriarch John Xiphilinus (1064–75) is said to have "renewed all the images of the saints."⁶⁰ In a passage rather lacking in clarity, Michael Psellus gives the following details concerning the restoration carried out by this Patriarch: "In the first place, the great and most-holy temple of divine Wisdom,

⁵⁶ *Liber Pontificalis*, ed. by Duchesne, II (Paris, 1892), p. 147f. For the date, see Grumel, *Regestes*, I, 2 (1936), No. 448. Stylianos in his letter to Pope Stephen V is mistaken in stating that Lazarus treated with Leo IV (d. July 17, 855): Mansi, XVI, col. 428 C. The mission is also mentioned in the extracts from the acts of the Council of 861 preserved by Cardinal Deusdedit: V. Wolf von Glanvell, *Die Kanonensammlung des Kardinals Deusdedit*, I (Paderborn, 1905), p. 608.

⁵⁷ Dvornik, *op. cit.*, p. 25 ff.

⁵⁸ *MGH, Epist.* VI, p. 482.

⁵⁹ See Mango, *Materials*, p. 70. The face of the carved marble cornice at the base of the apse semi-dome was once gilded, as we were able to ascertain in the course of our work. Perhaps this gilding, too, was applied in the eleventh century.

⁶⁰ *PG*, 110, col. 1237 B.

which in greater part and especially round the bema was not overly decorated, and those parts of the superimposed arches and ceiling which were cracked and altogether unadorned—both these parts he adorns and embellishes, the former by encompassing it, as it were, with gold crowns and honoring it with artful images, whereas the latter he repaired splendidly and challenged the ancient beauty with the new.”⁶¹ To judge by this statement, the restoration of the upper part of the church was largely structural, while the images that the Patriarch caused to be made (or renewed ?) were in the bema on ground level. There is, in any case, no reason to suppose that this work affected the apse mosaics, unless it was at this time that the archangel’s feet and certain elements of the garland frieze were touched up with red paint.

The disastrous collapse of May 19, 1346 is not known to have affected either the semidome of the apse or the bema arch. In the most reliable accounts of this calamity it is stated that the great eastern arch caved in, bringing down that portion of the dome which it supported;⁶² the parts that were subsequently rebuilt being that same eastern arch, the “roof of the bema” (= the eastern semidome)—both completed by October 6, 1346⁶³—the two eastern pendentives, and a little less than one third of the dome (in 1353–4).⁶⁴ The evidence of the written sources is in this respect in full accord with conditions observable in the building.⁶⁵ In the course of our work we had occasion to strip the western face of the bema arch at its crown because the thick coat of plaster dating from the Fossati repairs was in a precarious condition (fig. 40). The arch was found to consist of two voussoir rings, the inner one being made of bricks of normal size, while the outer one is constructed of *bipedales* about 0.70 m. long.⁶⁶ The bond between the two rings has been broken and the outer one has in places slipped forward by about 4 cm. We have found, however, no evidence of repair in the fourteenth century.

The apse mosaic of the Virgin and Child figures in a dream or vision purported to have been vouchsafed to the future Patriarch Isidore on January 6, 1347, i.e., barely eight months after the collapse. Isidore dreamed that he was in the church of the Blachernae in the midst of a great throng which included the Patriarch (the anti-Palamite John Kalekas). From there they all proceeded to St. Sophia and, while the Patriarch and his suite halted within the Imperial Door, Isidore went to the center of the nave and stationed himself under the ambo. While he was standing there, the Mother of God came out of her image which was above the Patriarch’s seat (the latter being presumably in the center of the synthronon) and, approaching Isidore, asked him why he was not oc-

⁶¹ Sathas, *Bibl. gr. med. aevi*, IV, p. 451.

⁶² Nicephorus Gregoras, Bonn ed., II, p. 749. The fullest discussion of the collapse is by I. Ševčenko in *Südostforschungen*, XII (1953), p. 169ff. Note that, according to Gregoras (II, p. 751), the catastrophe would have been much more serious had not the Emperor Andronicus II buttressed up the eastern wall of the church.

⁶³ S. Lampros, *Βραχέα χρονικά, Μνημεία τῆς ἑλληνικῆς ἱστορίας*, I, 1 (Athens, 1932), p. 89.

⁶⁴ Gregoras, III, p. 198f.; Cantacuzenus, Bonn ed., III, p. 29f.

⁶⁵ W. Emerson and R. L. Van Nice in *AJA*, XLVII (1943), p. 434ff.

⁶⁶ Bricks of this large size are used in the great arches of the dome. See Emerson and Van Nice in *Archaeology*, IV, 2 (1951), p. 102.

cupying the place appropriate to his rank, pointing, as she did so, to the patriarchal throne. She also bade Isidore go up to Kalekas (who was still near the Imperial Door) and express her dissatisfaction in him; this Isidore did and, upon returning, was presented by the Virgin with a gold basket containing a Gospel and a cross. She then ascended back into her image. As for Isidore, he walked up to the sanctuary, hesitant to believe the message that had been imparted to him. The Mother of God had to come down to him once more to express it in even plainer language. Less than a month later Kalekas was deposed (February 2, 1347) and Isidore elected patriarch.⁶⁷

CONCLUSION

The principal result of our investigation has already been stated: the mosaic of the Virgin and Child in the apse of St. Sophia is, in our opinion, the image that was unveiled in 867, and all the other mosaics of Phase 2, namely, the archangels, the commemorative inscription, and the garlands are contemporary with it. This conclusion leads us to make certain further observations.

In the first place, we have found no trace of iconoclastic activity. On a superficial view, the suture round the figure of the Virgin might have been interpreted in the same sense as the cruciform seams in the apses of St. Sophia, Salonica, and the Dormition church at Nicaea, in both of which a mosaic of the Virgin was substituted for an earlier cross. We have been able to show, however, that in our case this suture merely marks the boundary between two successive stages in the execution of the mosaics in the ninth century and offers no clue to what might have been there at an earlier date.

When the archangels were made in the soffit of the bema arch, there was evident concern to preserve as much as possible of Phase 1 gold mosaic. As we have seen, the areas that were cut out must have been carefully calculated since they closely correspond to the contours of the figures. Yet, in the semi-dome of the apse Phase 1 gold mosaic was retained only between the windows, while everything else had to be made *de novo* (fig. B). This is certainly surprising in view of the economy we have observed in the soffit of the bema arch: had the pre-867 decoration consisted of a large cross on a plain gold field (as in St. Irene), there is no reason why this gold background should have been removed. The fact that it was could be explained in at least two different ways.

The simpler explanation would be that the Iconoclasts did not tamper with the apse decoration: we have, in fact, no explicit evidence that they did.⁶⁸ The commemorative inscription, it is true, speaks of images which the Iconoclasts had cast down "here" (ἐνθάδε), but the connotation of this adverb prob-

⁶⁷ A. Papadopoulos-Kerameus, *Žitija dvukh vselenskikh patriarkhov XIV veka* (= Zapiski istor.-filol. Fakul'teta Imp. S.-Peter. Univ., 76 [1905]), p. 110ff.

⁶⁸ The statement of Photius that the image of the Theotokos was "rising up from the very depths of oblivion" (ed. by Aristarches, II, p. 304; English trans., p. 293) might be interpreted to mean that a representation of the Virgin, destroyed by the Iconoclasts, had previously existed in the same place. We are inclined to think, however, that Photius is speaking in general rather than specific terms.

ably extends to the whole church and is not limited to the apse. Justinian's original decoration was presumably non-representational and it might have subsisted until 867. In that case we would have to suppose that the Justinianic decoration in the semidome of the apse was of a kind that did not lend itself to adaptation. The background might have been filled with clouds or vegetal rinceaux or any other appropriate ornament provided this did not entail a large expanse of unbroken gold.

Alternatively, the mosaics of the semidome may have gone through several phases before the ninth century. The Justinianic decoration may have been replaced by a figure of the Virgin or a multi-figured composition in the late sixth or seventh century; if so, such images would have been removed by the Iconoclasts who would have substituted some form of symbolic decoration that they considered fitting—say, a cross surrounded by foliage or shrubs. Finally, the iconoclast mosaics would have been totally removed in 867 because no appreciable portion of them could be usefully retained.

Whichever of these two explanations is closer to the truth, it is evident that the ninth-century mosaics of the apse were designed to have a "triumphal" appearance. This note, so evident in Photius' sermon, is echoed by the profusion of garland friezes. What is particularly telling is that the original geometric surrounds of the apse windows were replaced by garland borders, no doubt with a view to enhancing the pomp of the decoration.

Finally, a word about the geometric borders. We have found two closely related types, both of which have been shown to be Justinianic:⁶⁹ a simpler kind in the soffits of the apse windows (fig. 25) and a more elaborate kind in the bema arch (figs. 51, 53, 55) and round the windows of the northeast exedra (fig. 39). Both kinds were used extensively in St. Sophia: the former in the mosaics, now destroyed, of the west gallery,⁷⁰ while the latter bordered some of the main articulations of the interior superstructure of the nave, namely, the four principal arches (fig. 56),⁷¹ the tympana, and the ribs of the dome to about a man's height. This design was imitated in the course of successive restorations of the mosaics in the ninth, tenth, and fourteenth centuries, but the work of these various periods may be distinguished thanks to considerable differences in technique and materials, as we hope to show on another occasion. At the base of the tympana this motif was successfully used in the late ninth century to give the illusion of a decorated parapet-wall "behind" the figures of the Church Fathers and bishops. This device, as we can now see, was not created by the mosaicists of the ninth century, but was imposed upon them by their desire to maintain the unity of the interior decoration.

⁶⁹ They offer an obvious resemblance to the bands of ornament, surely of pre-iconoclastic date, in the apse of the Dormition church at Nicaea: Th. Schmit, *Die Koimesis-Kirche von Nikaia* (Berlin-Leipzig, 1927), pls. XII, XX.

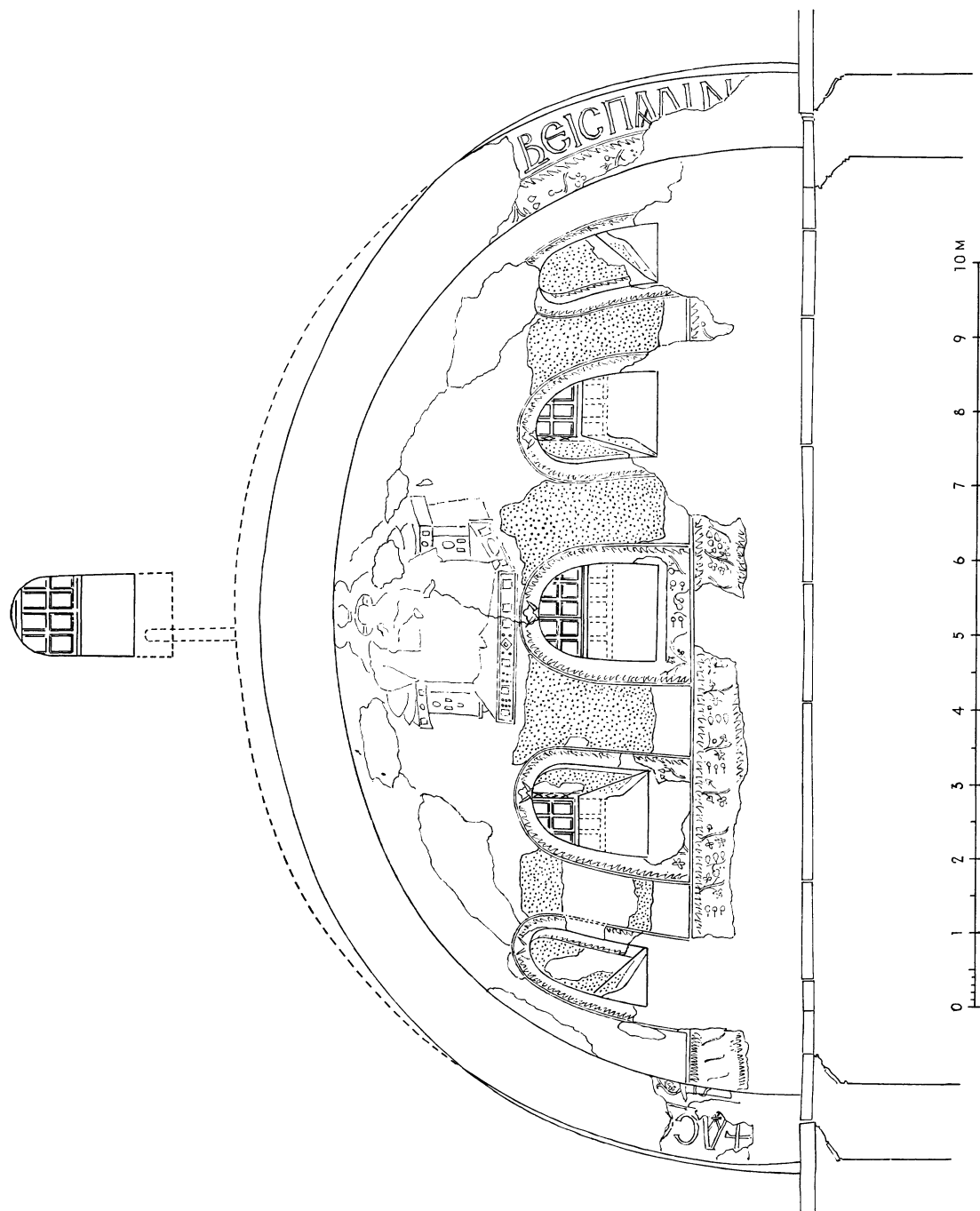
⁷⁰ Mango, *Materials*, figs. 42, 43, 46. This opens up the possibility that the mosaics of the west gallery were of the sixth rather than of the ninth century (as suggested *ibid.*, p. 42).

⁷¹ Our illustration shows the east reveal of the great southern arch with the mosaics partially cleaned of Fossati overpainting. These mosaics appear to be of Justinianic date.

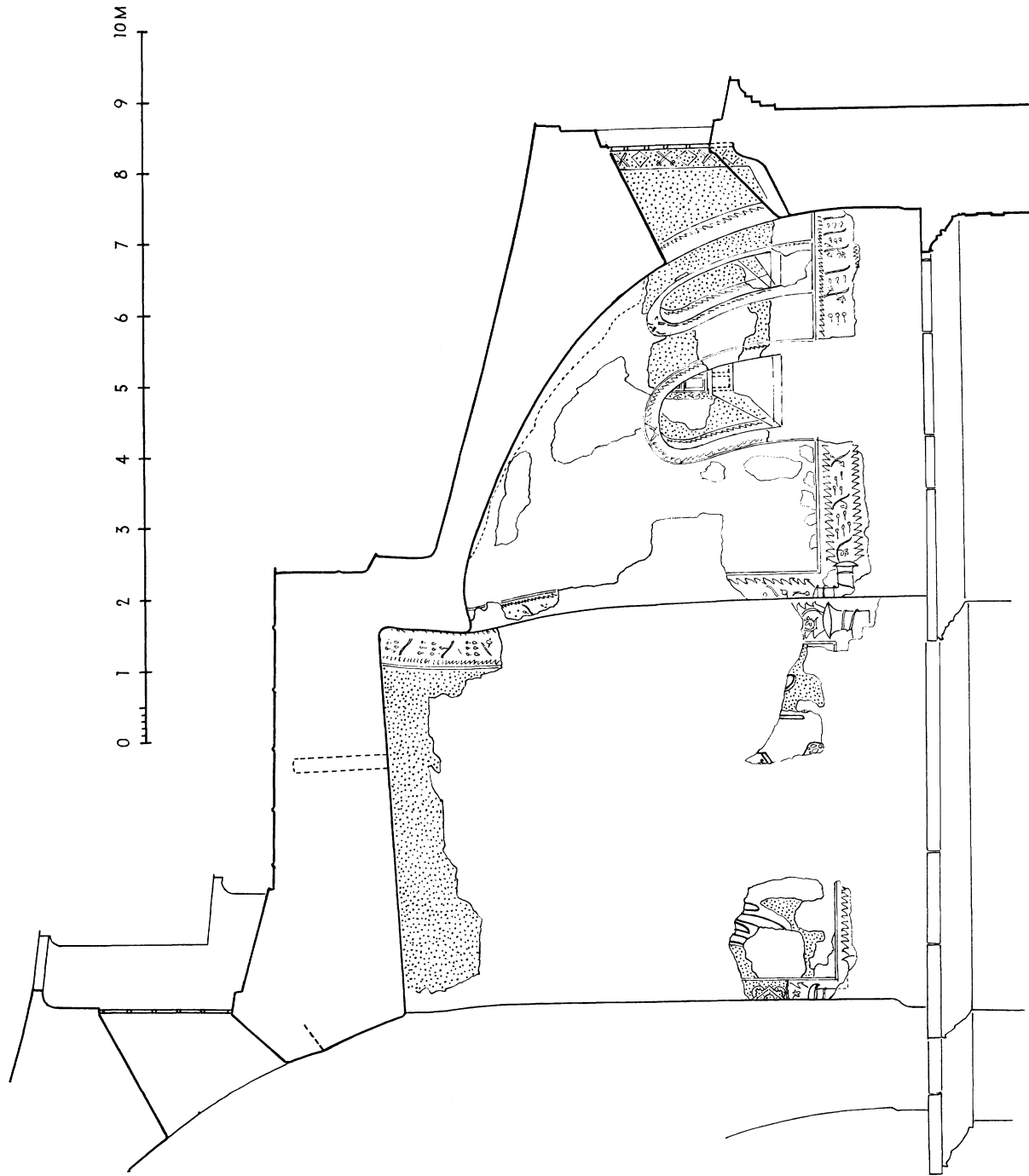
Note on the Illustrations

In figures 3, 14, 15, 16, 17, 18, 19, 20, 28, 29, 31, 36, 42, 46, 47, 51, and 52 solid black lines indicate boundaries between the work of two different periods (Phase 1 and Phase 2) and broken lines the probable course of such boundaries. Dash-and-dot lines denote boundaries between separate areas of work executed as part of one continuous campaign, and dotted lines the probable course of such boundaries. In the case of figures 33, 35, and 38 the dash-and-dot line indicates the course of a suture between two work areas of a single campaign, but it has been drawn as a solid line where the joint appears in the cross section of the plaster layers. We do not wish to imply that all areas where we have not drawn dash-and-dot (or dotted) lines were necessarily executed in a single operation.

Mr. R. L. Van Nice has kindly allowed us to use tracings of his architectural drawings for the preparation of our text figures B and C.



B. Elevation of Apse Semidome. Areas of Phase 1 Mosaic are shown stippled



C. Section through Apse Semidome and Bema Arch looking North. Areas of Phase 1 Mosaic are shown stippled



1. Istanbul, St. Sophia. General View of Apse and Bema Arch



2. Apse, Virgin and Child



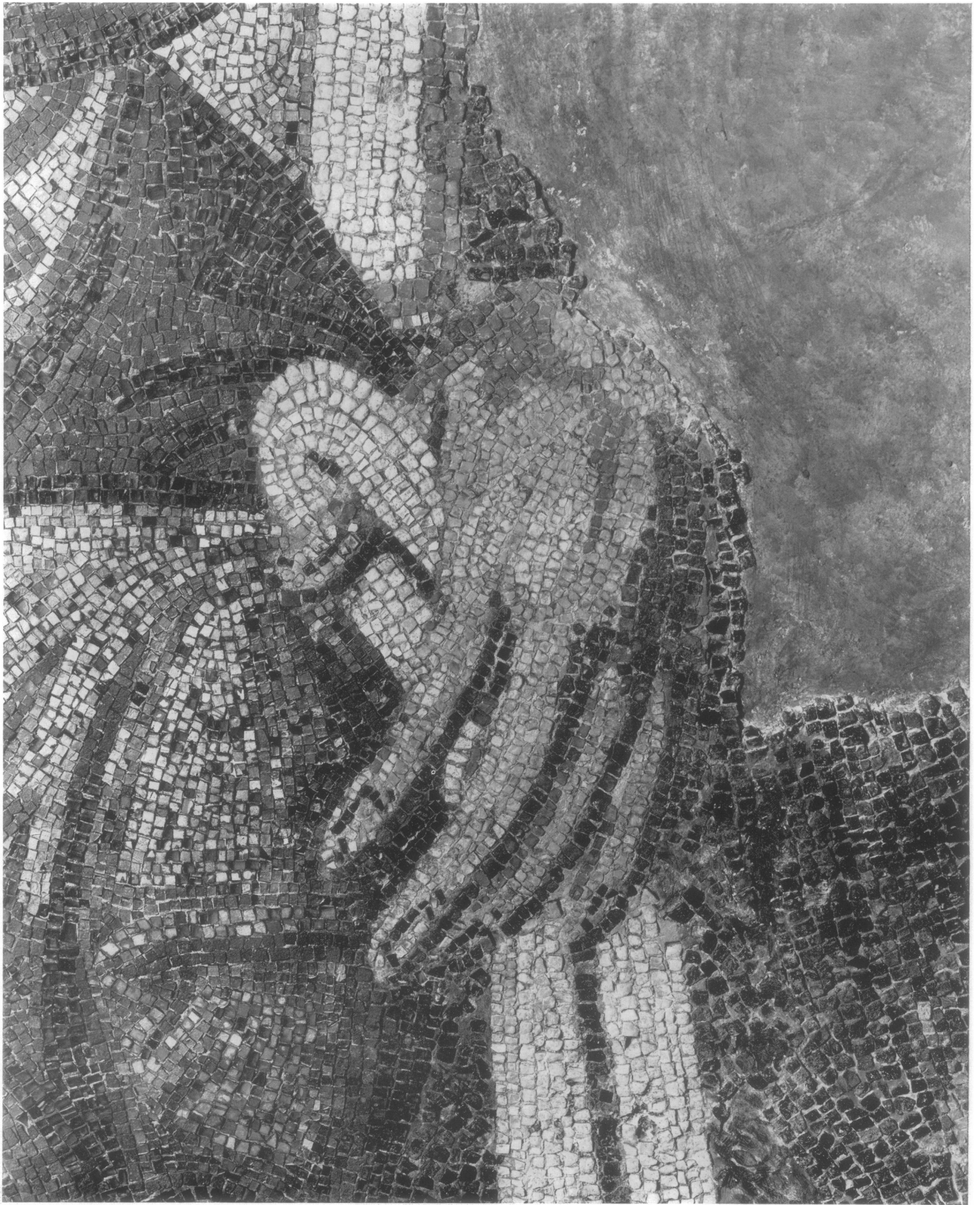
3. Apse, Virgin and Child, with Indications of Sutures



4. Apse, Virgin and Child, Head of Virgin



5. Apse, Virgin and Child, Right Hand of Virgin and Right Hand of Child



6. Apse, Virgin and Child, Left Hand of Virgin



7. Apse, Virgin and Child, Lower Part of Figure



8. Apse, Virgin and Child, Head of Child



9. Apse, Virgin and Child, Feet of Child



10. Apse, Virgin and Child, North Side of Throne



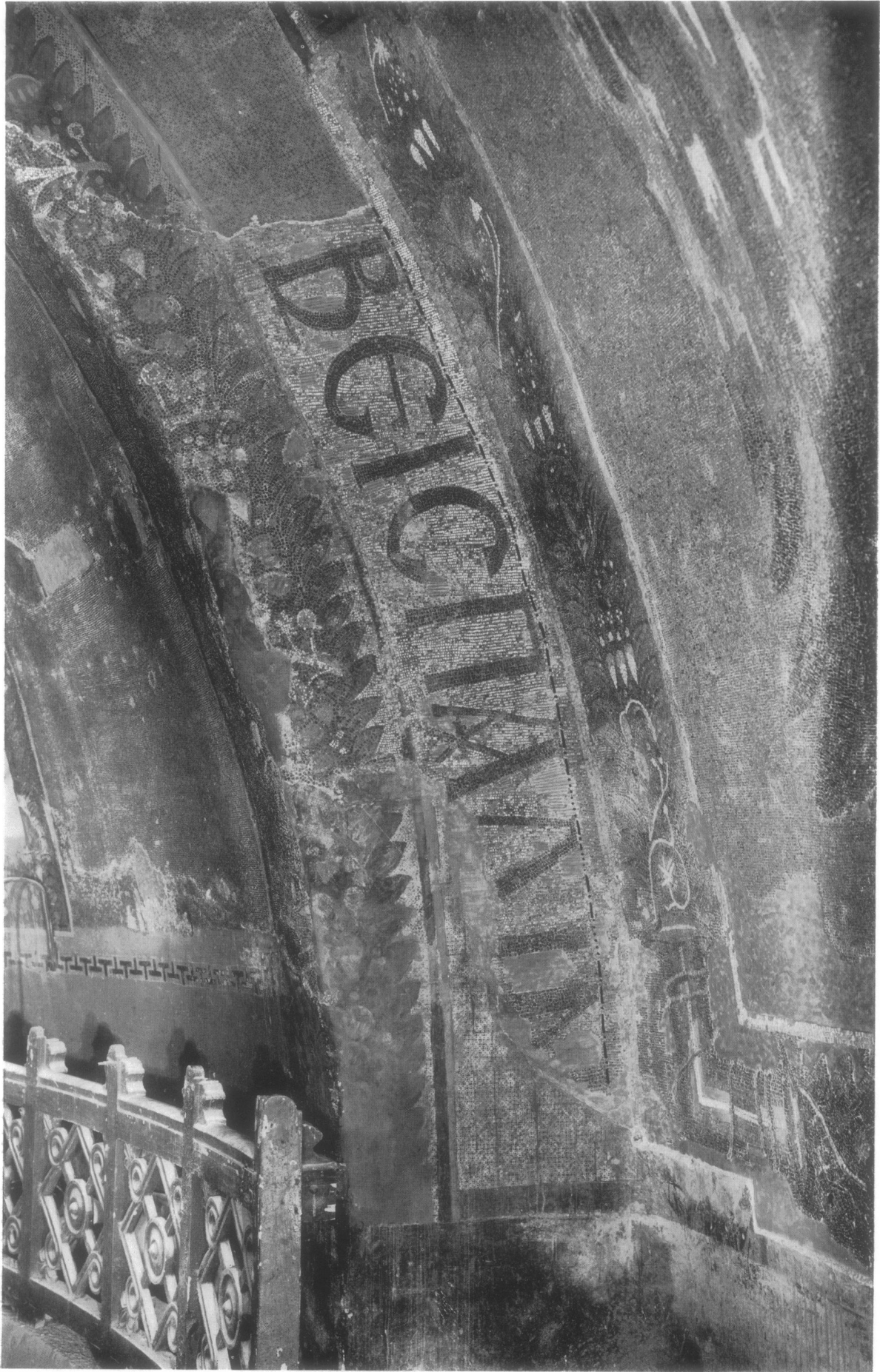
11. Apse, Virgin and Child, South Side of Throne



12. Apse, Virgin and Child



13. Face of Apse Semidome, Beginning of Inscription



14. Face of Apse Semidome, End of Inscription, with Indication of Suture



15. North Side



16. South Side
Gold Background of Apse Semidome



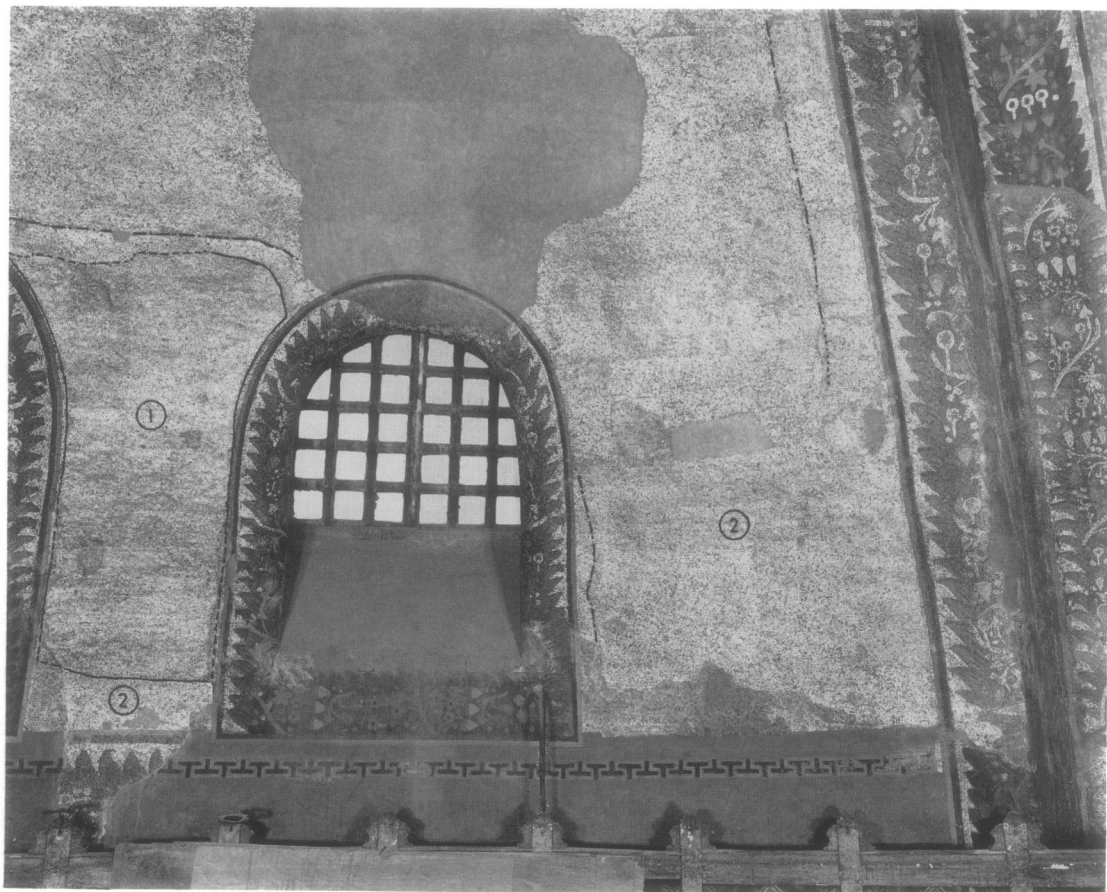
17. Window 1 (before Sill was lowered)



18. Windows 2 and 3 (before Sill of Window 2 was lowered)
Apse Semidome

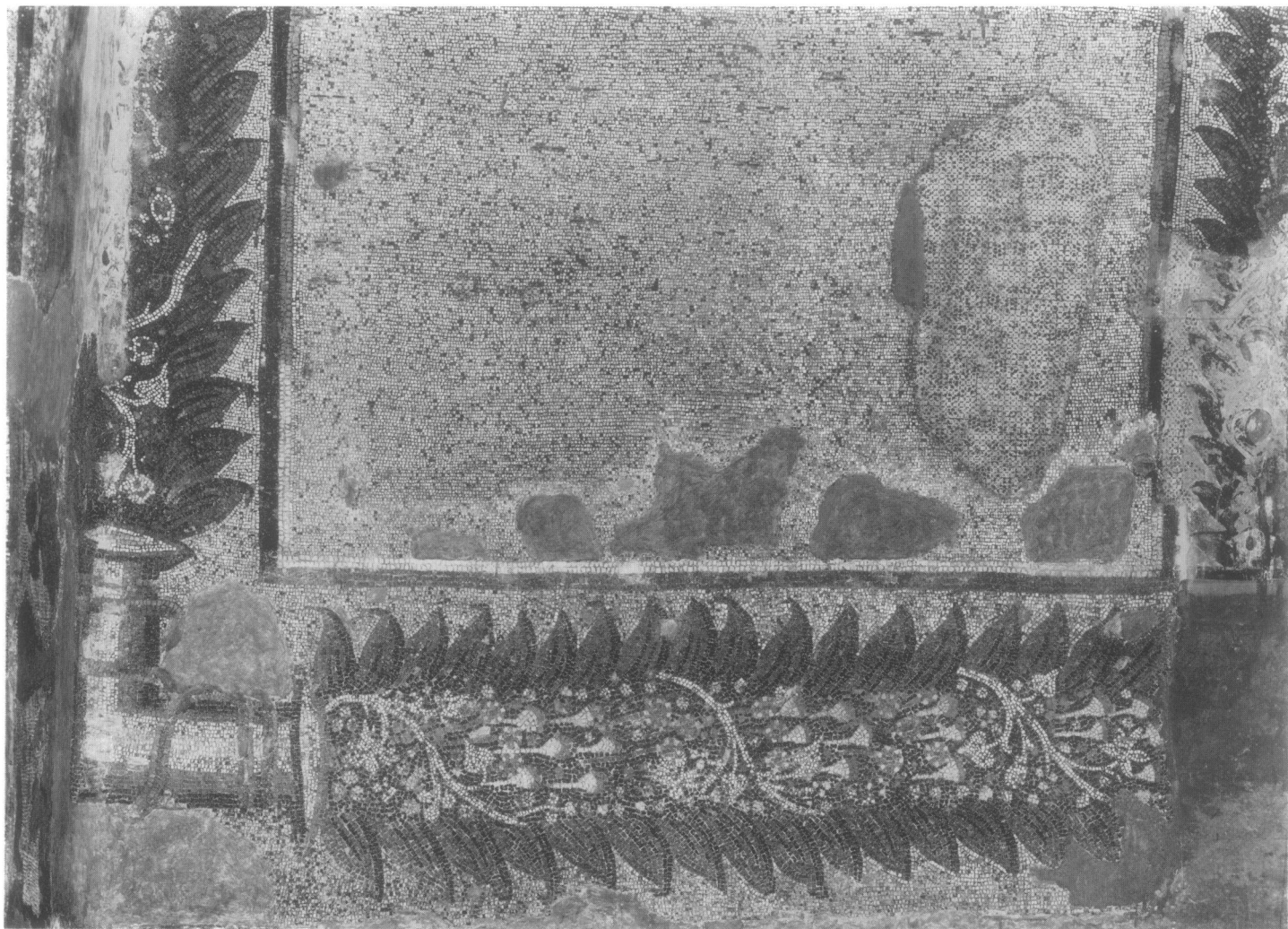


19. Windows 3 and 4 (before Sill of Window 4 was lowered)

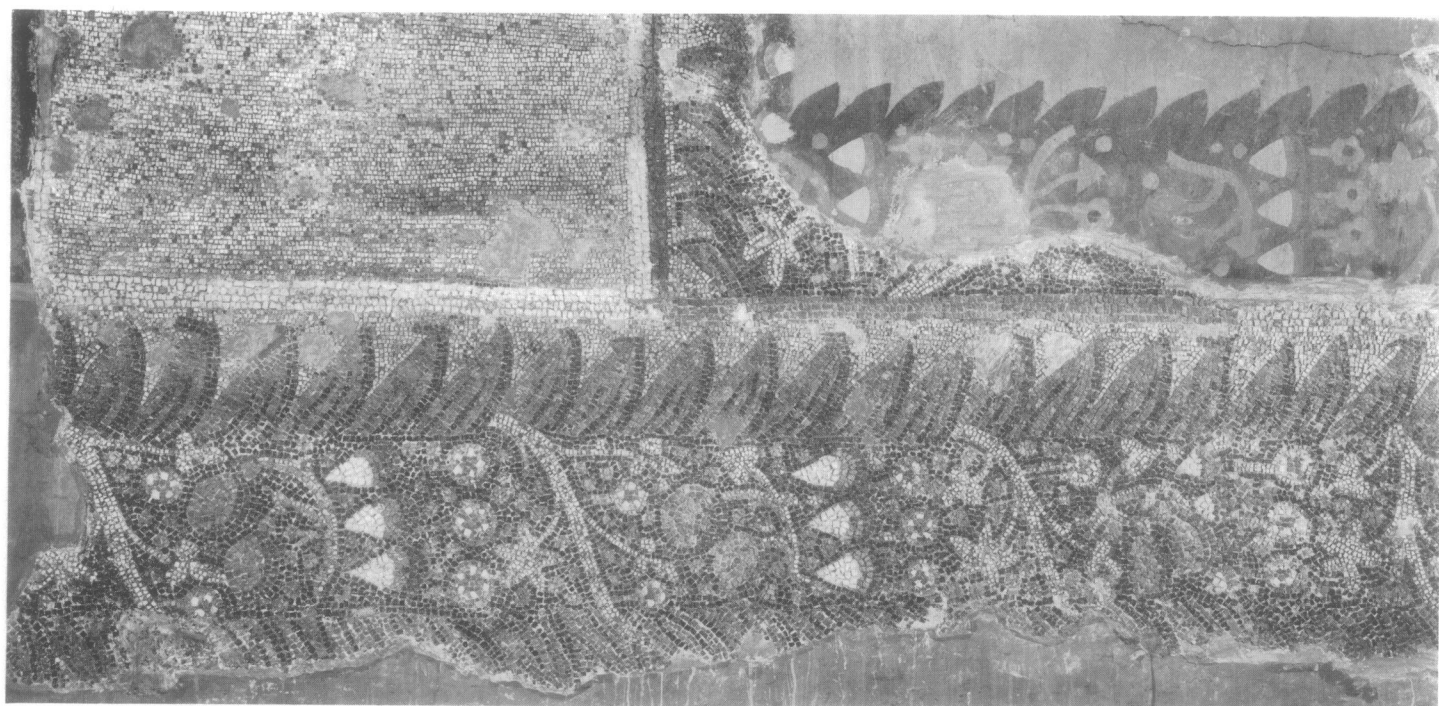


20. Window 5 (before Sill was lowered)

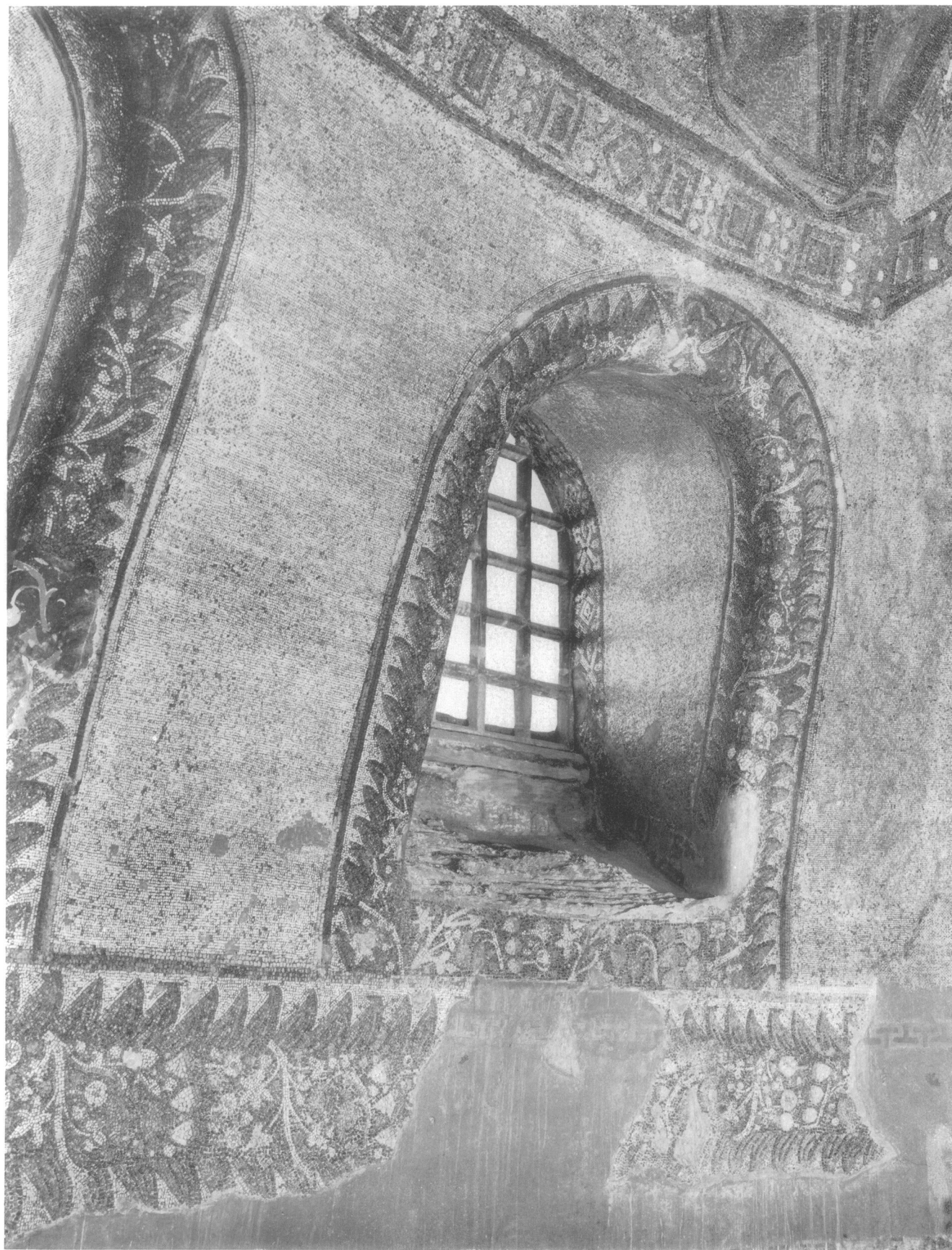
Apse Semidome



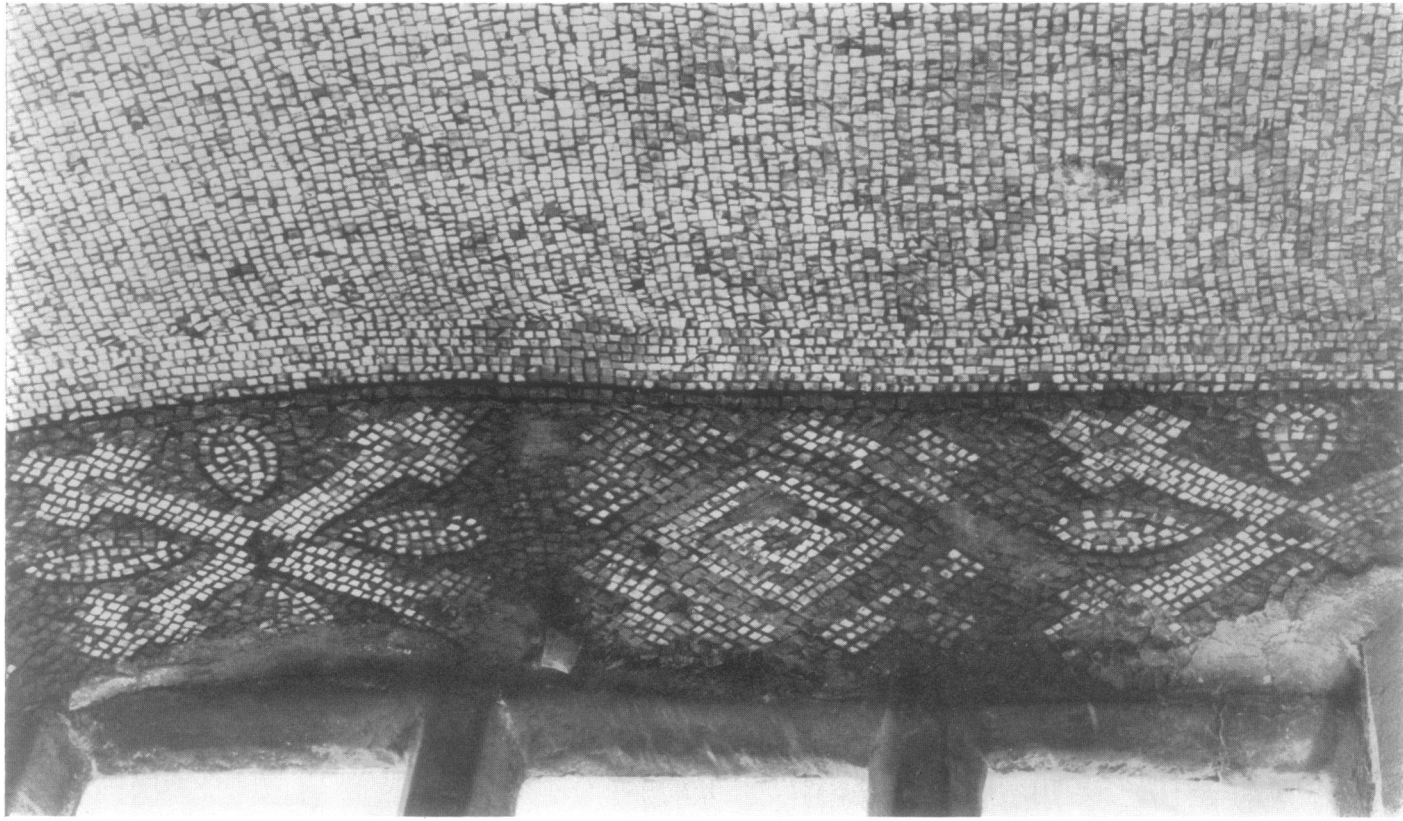
21. Garland Border between Face of Apse Semidome and Window 1



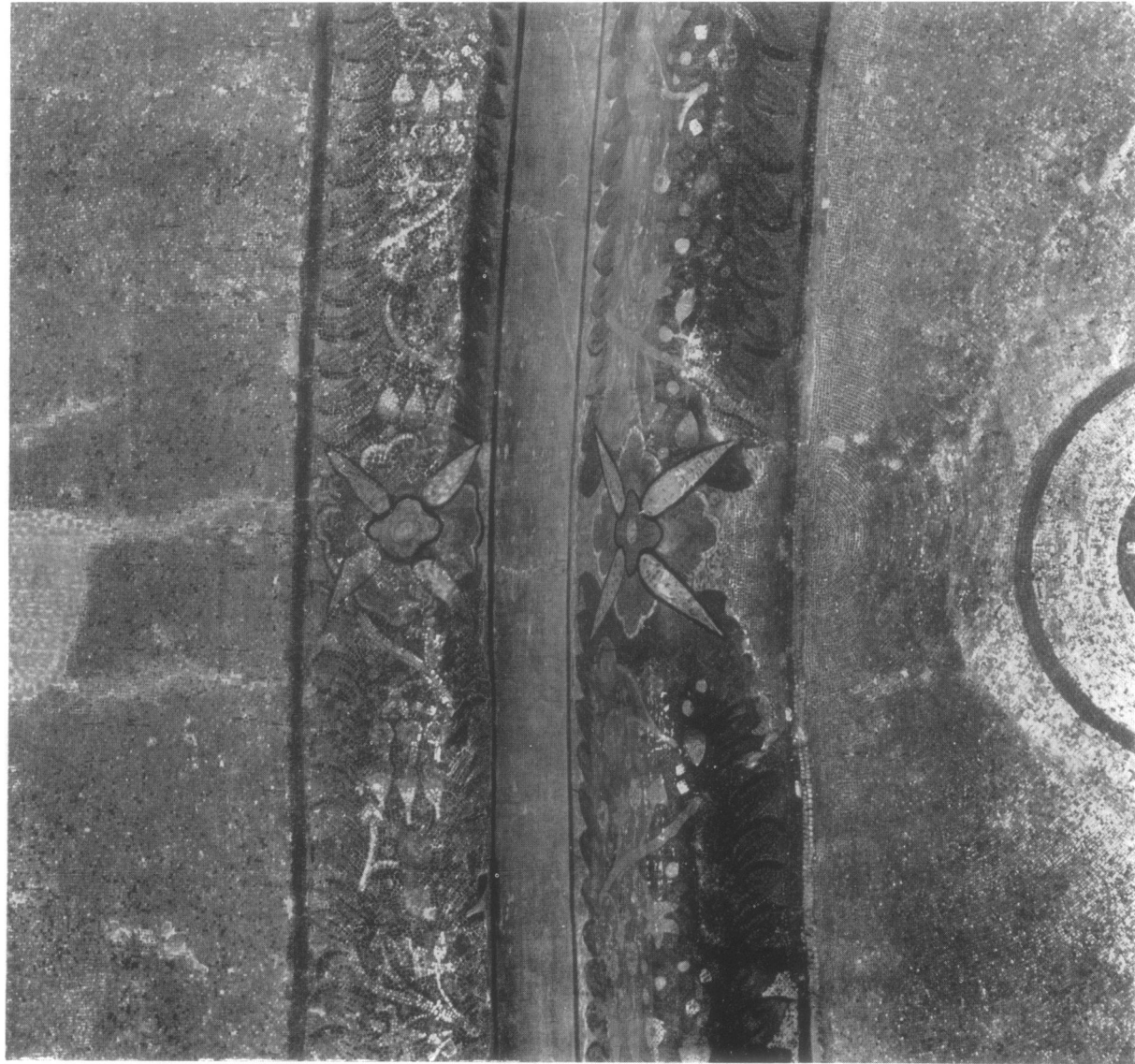
22. Garland Border below Window 2



23. Apse Semidome, Window 3 (after Sill was lowered)



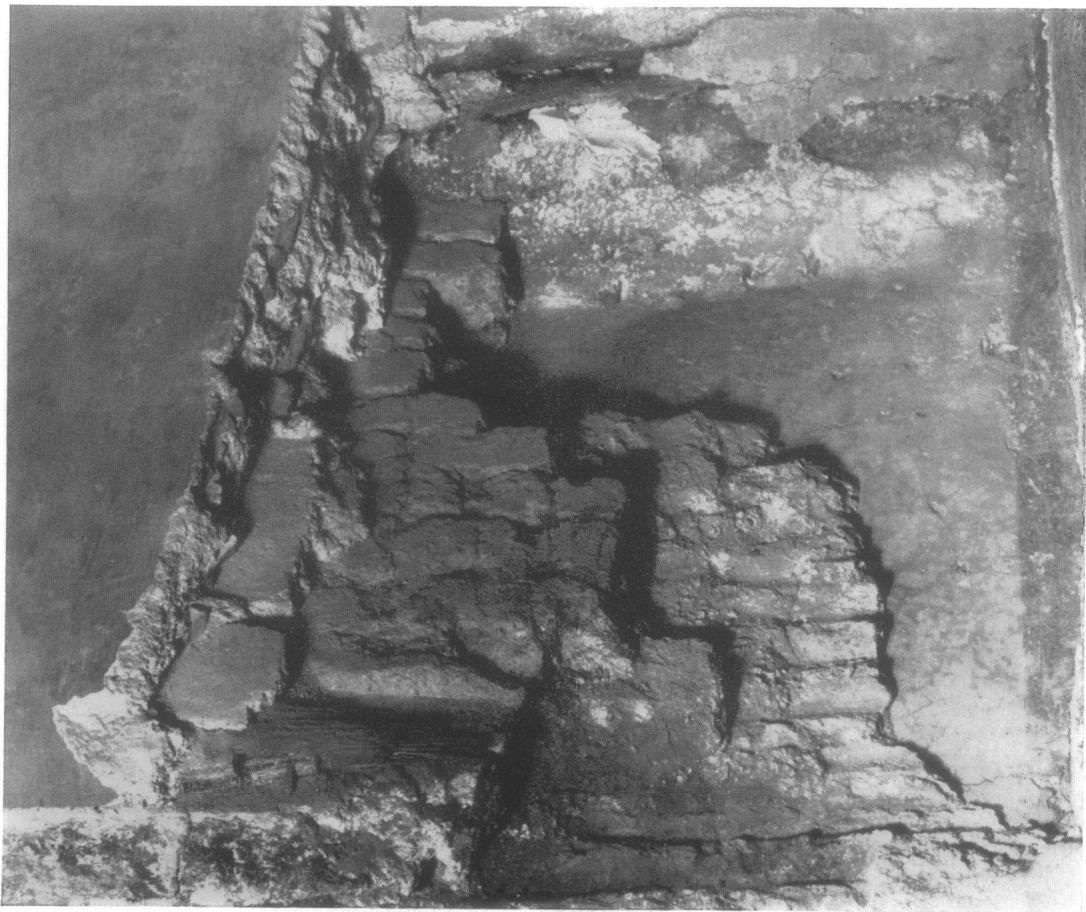
25. Window 3, South soffit, Detail of Geometric Border



24. Crown of Apse Semidome and Bena Arch

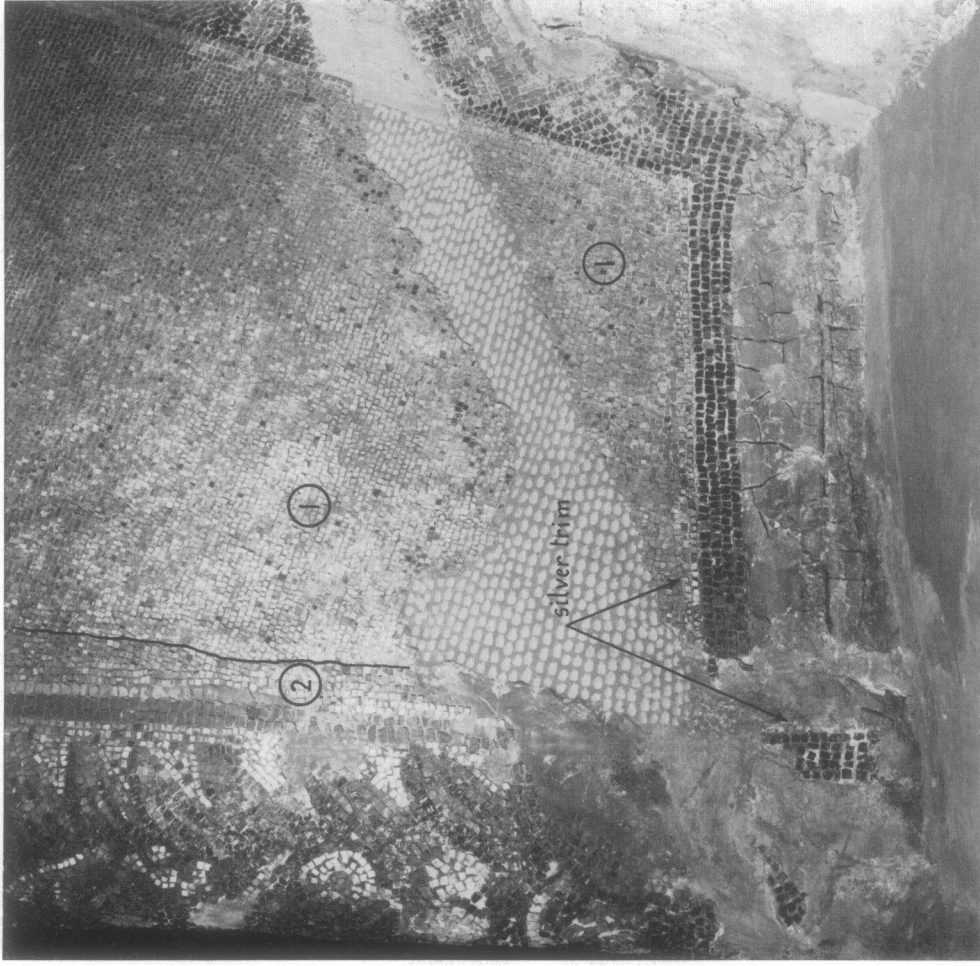


26.



27.

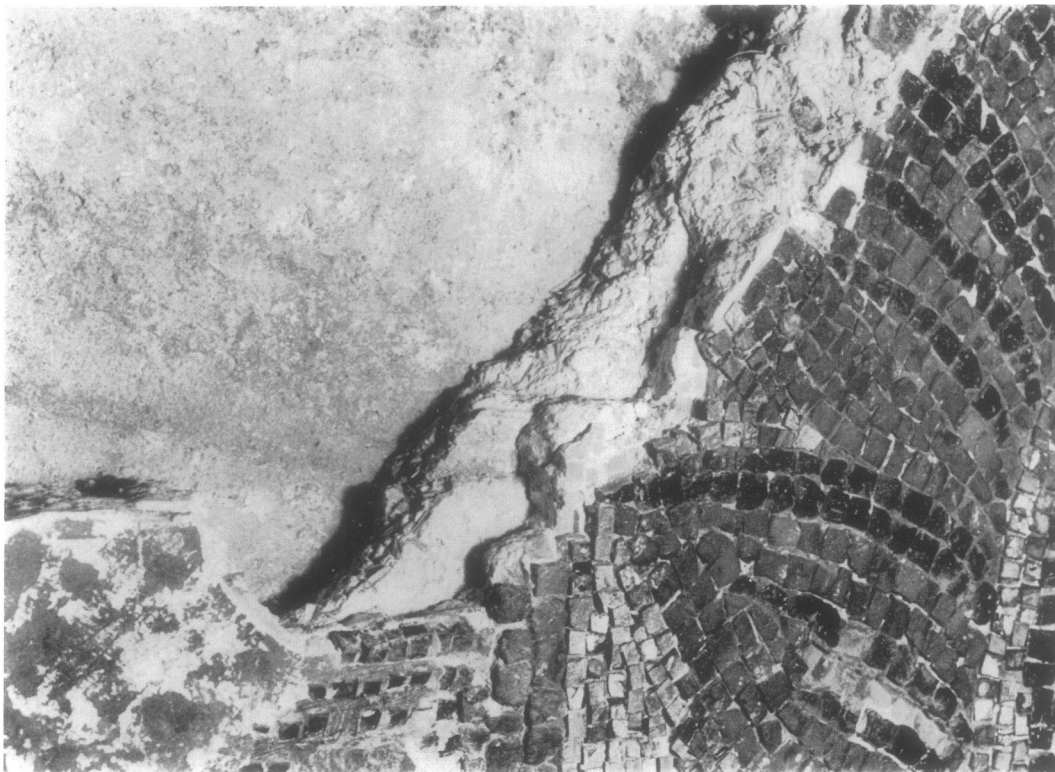
Window 3, Cutting showing Successive Sill Levels



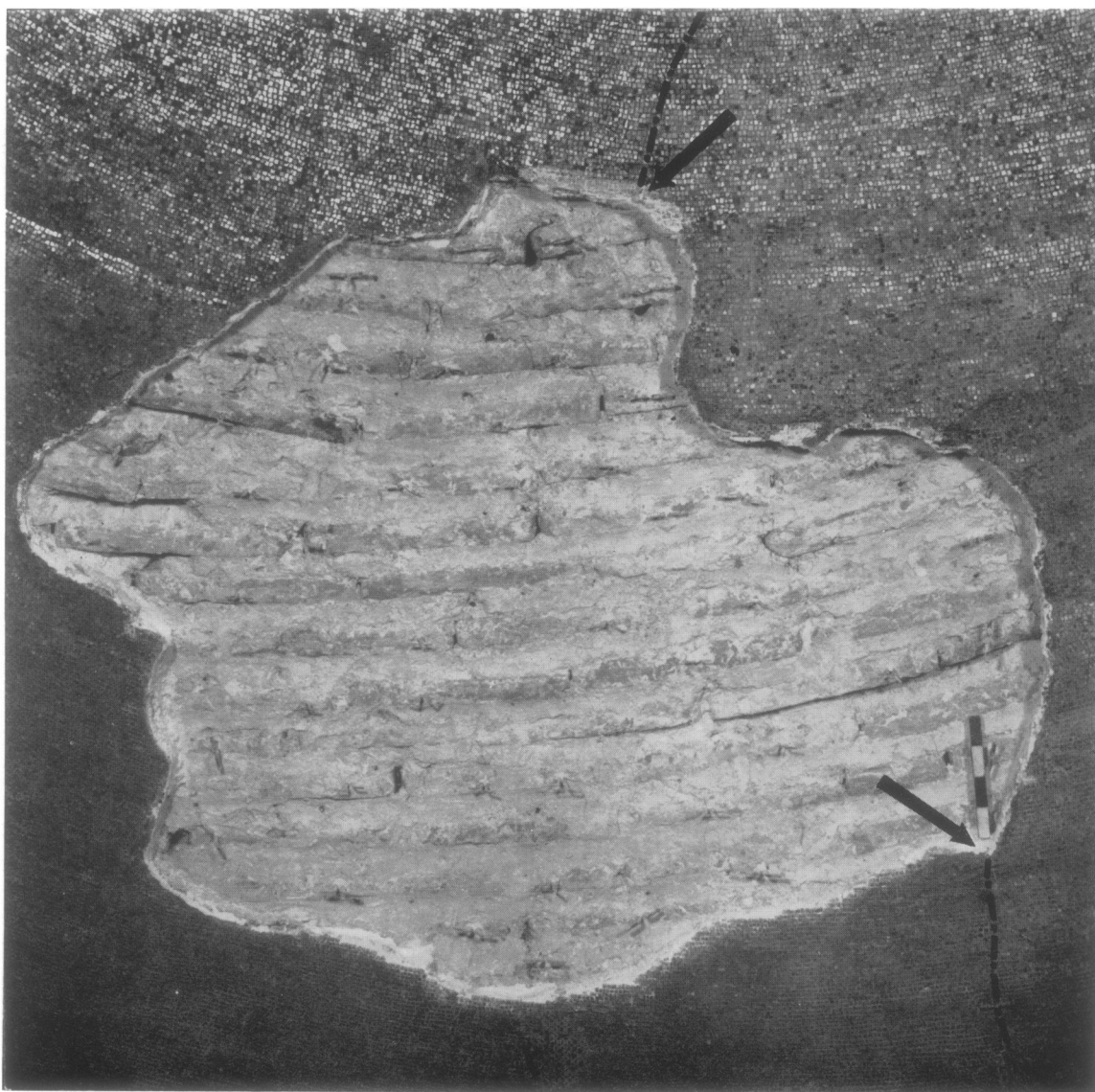
28. Window 2, North Soffit (after Sill was lowered)



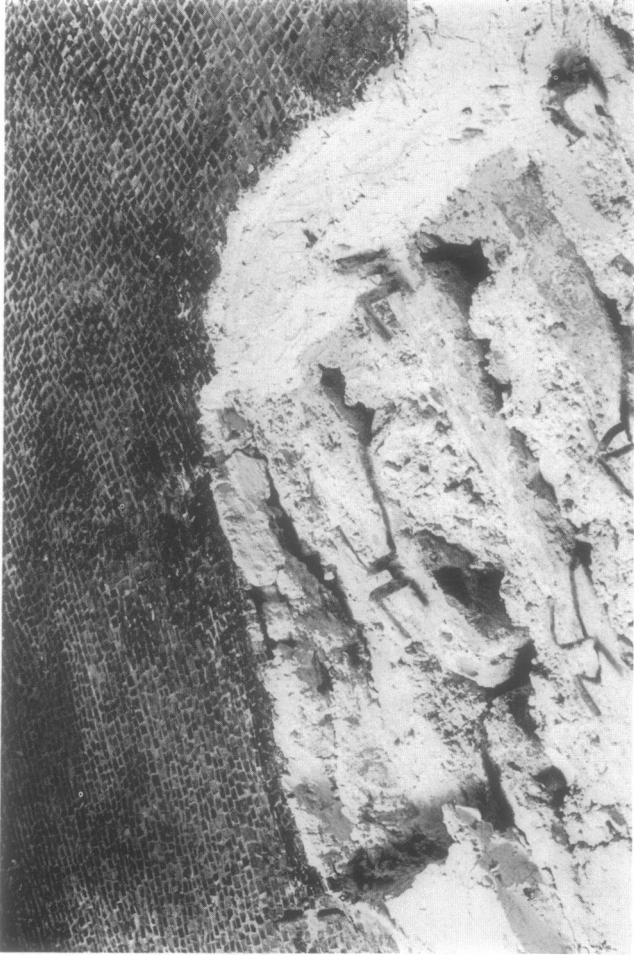
29. Window 4, South Soffit (after Sill was lowered)



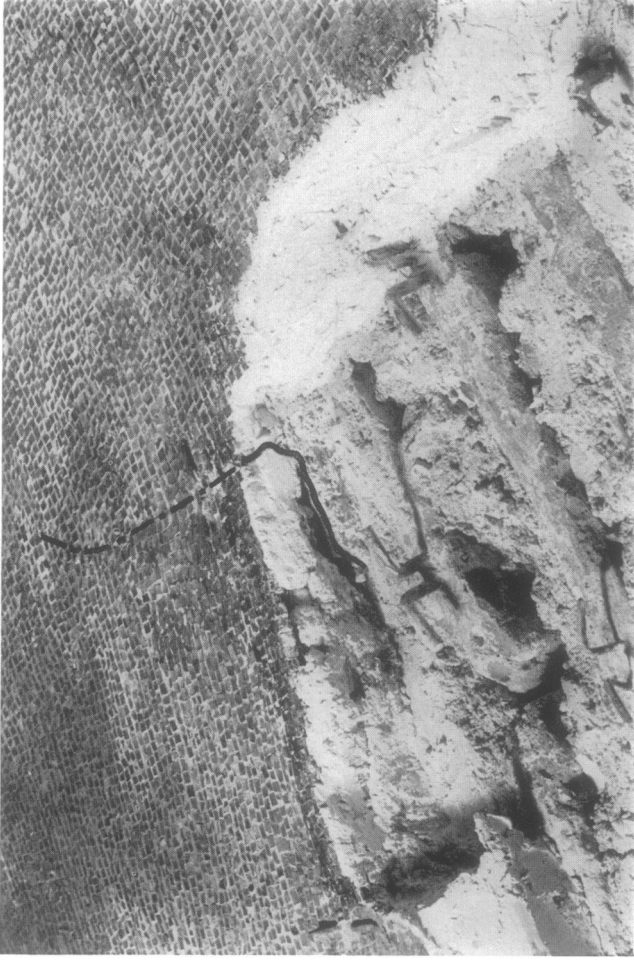
30. Face of Apse Semidome, North Springing, Juncture between Inscription and Garland Border



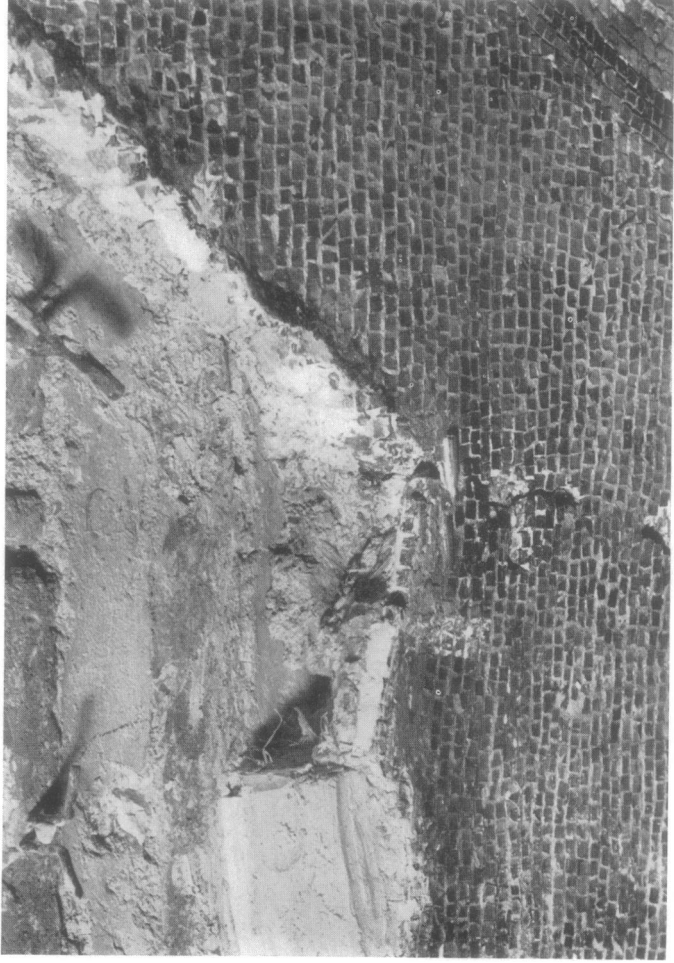
31. Area of Loss to North of Virgin and Child, with Indications of Sutures



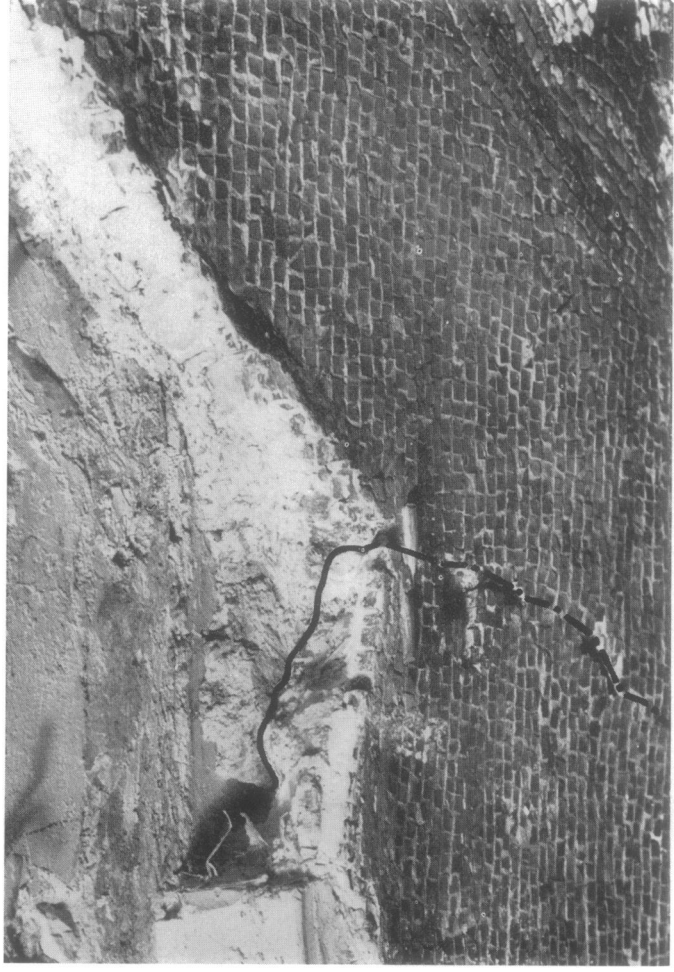
32. Suture running into the Top of the Area of Loss to North of Virgin and Child



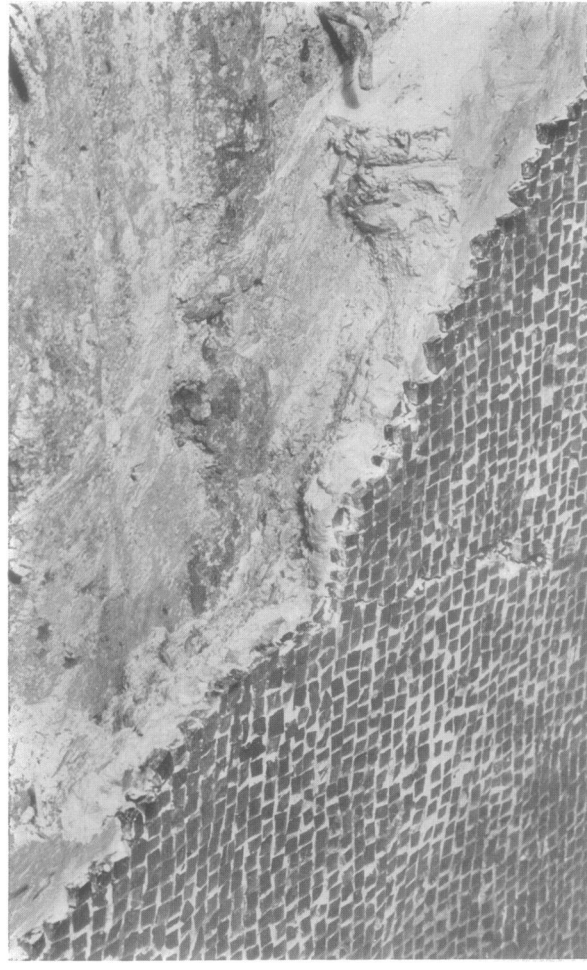
33. Same as Fig. 32, with Black Line showing Underlap and Overlap of Second and Third Beds of Plaster onto Surface of First Bed



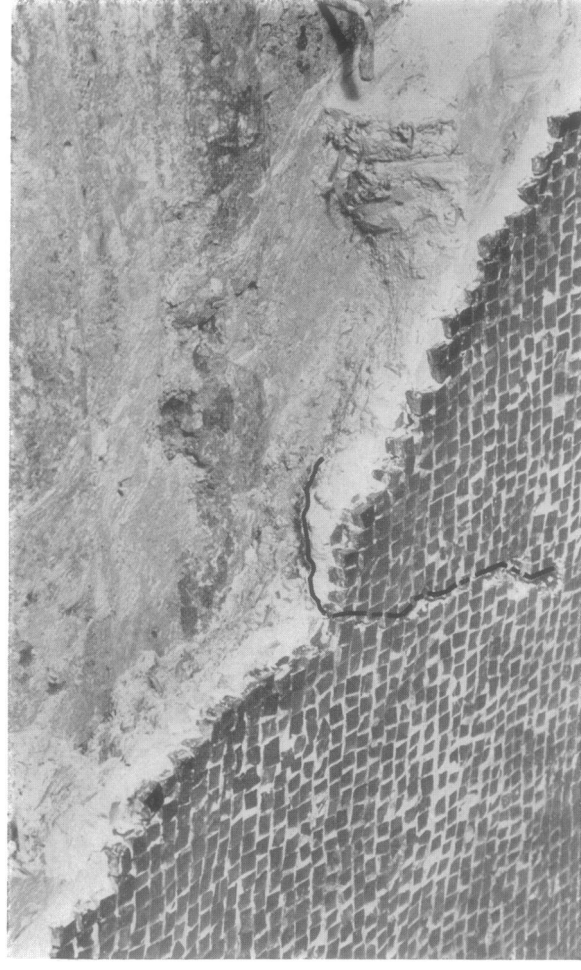
34. Suture running into the Bottom of the Area of Loss to North of Virgin and Child



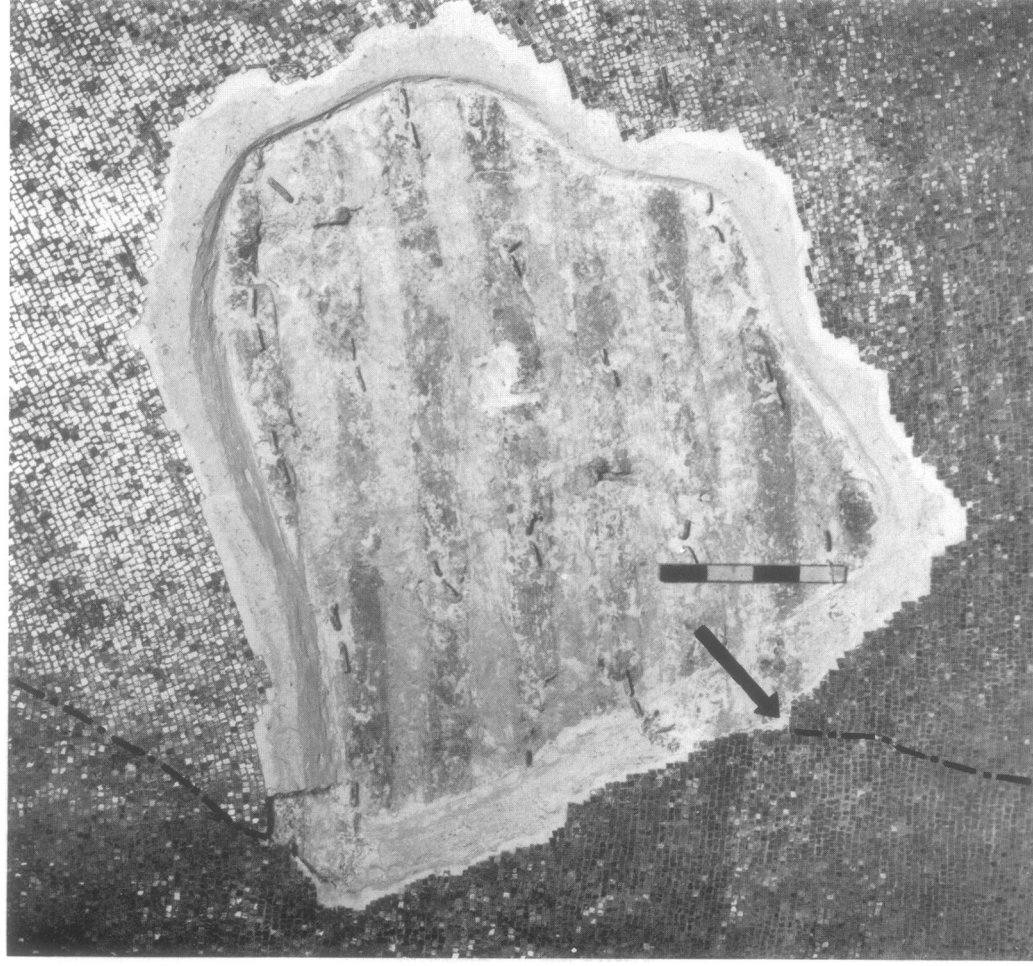
35. Same as Fig. 34, with Black Line showing Underlap and Overlap of Plaster Beds



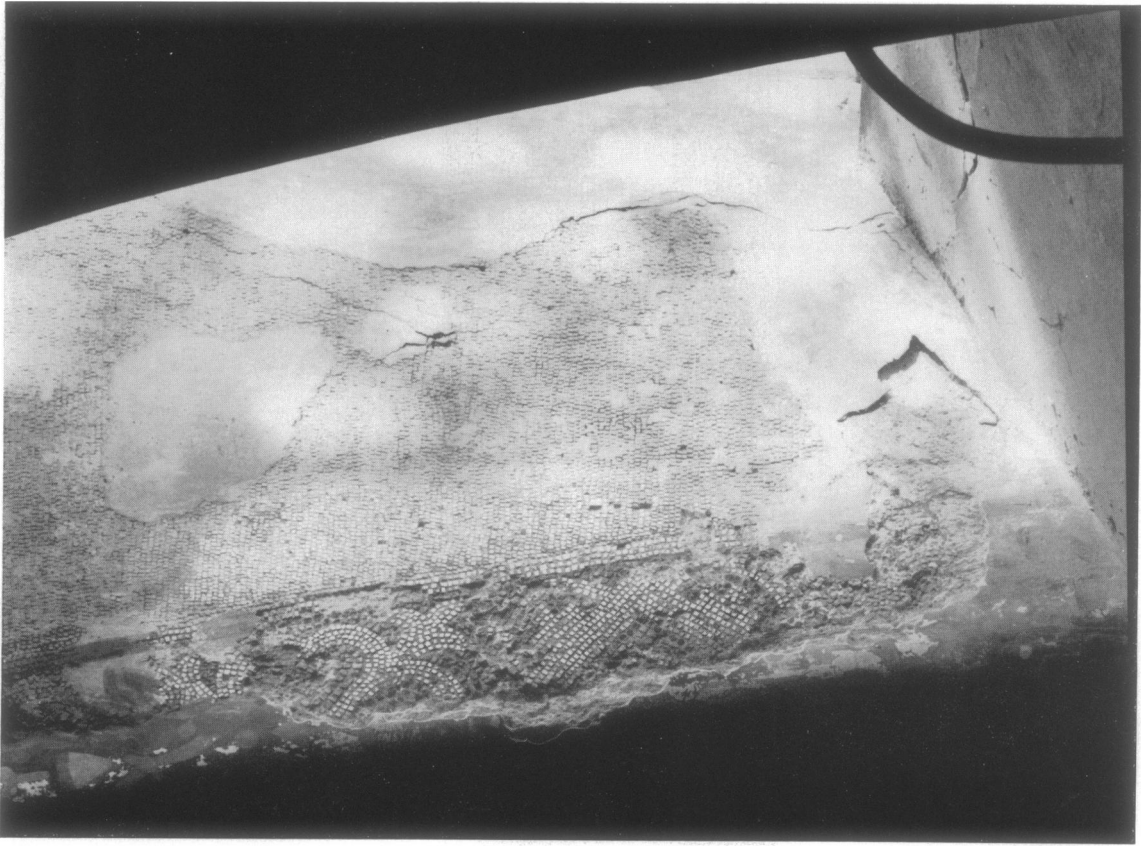
37. Suture running into the Bottom of the Area of Loss to South of Virgin and Child



38. Same as Fig. 37, with Black Line showing Underlap and Overlap of Second and Third Beds of Plaster onto Surface of First Bed



36. Area of Loss to South of Virgin and Child with Indications of Sutures



39. Northeast Exedra, Geometric Window Border



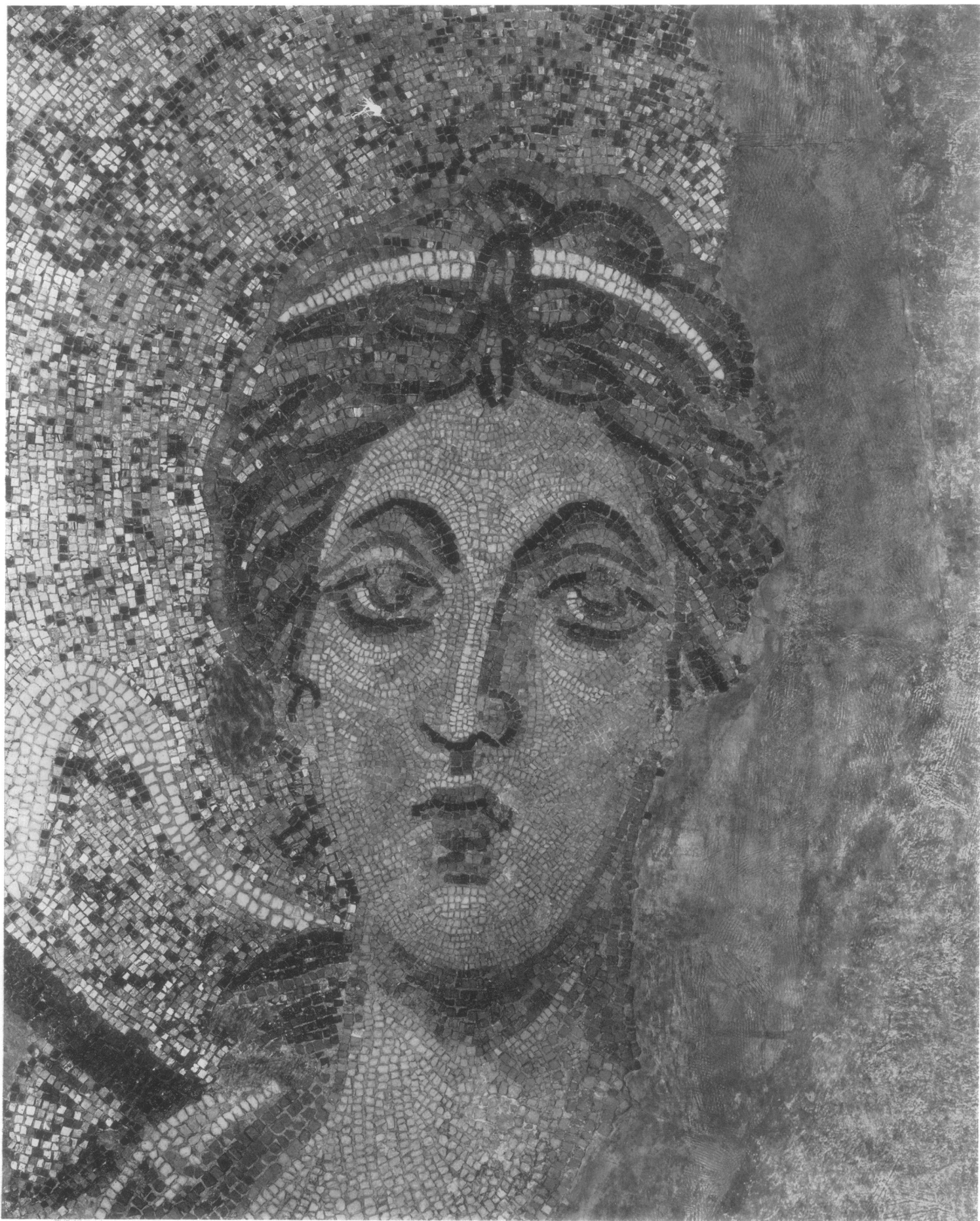
40. Brickwork at Crown of Bema Arch



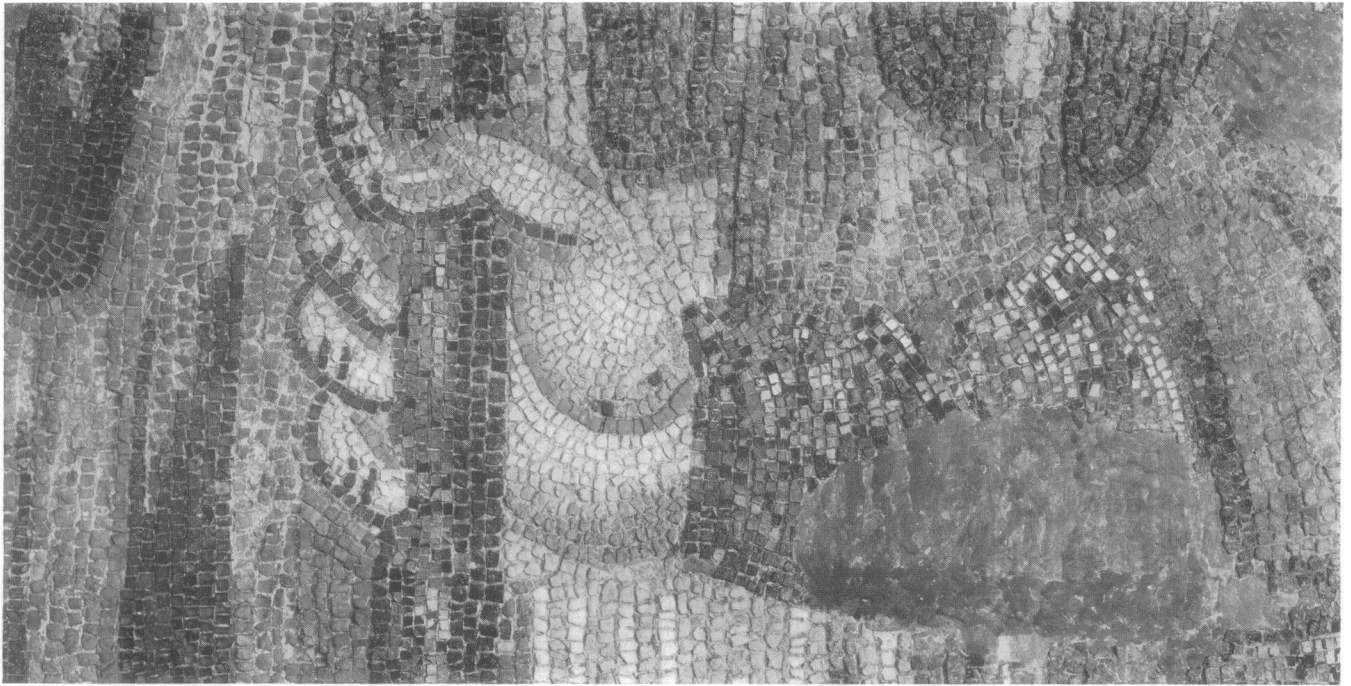
41. Bema Arch, South Archangel



42. South Archangel with Indications of Sutures



43. South Archangel, Head



44. Right Hand



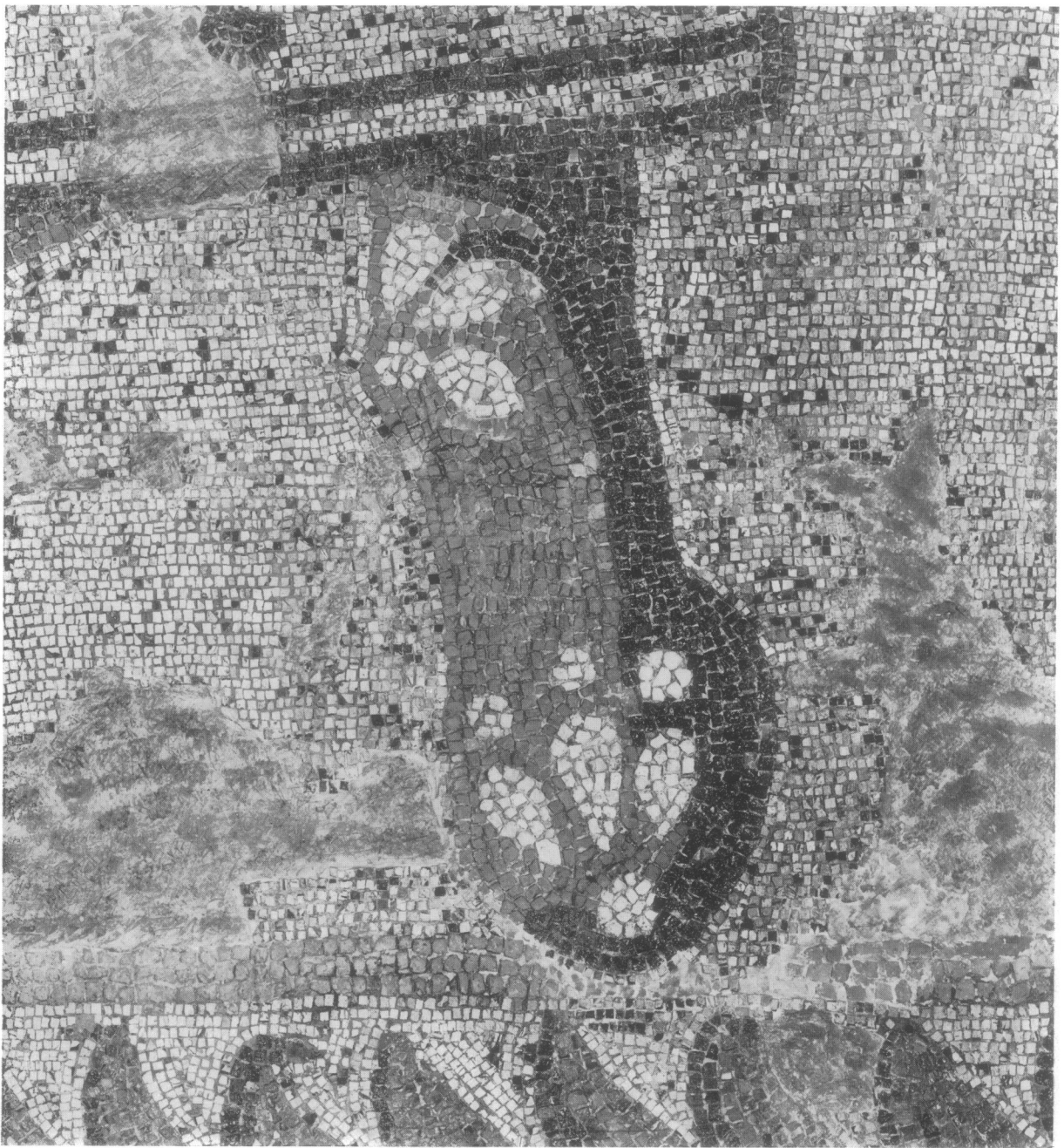
45. Left Hand
South Archangel



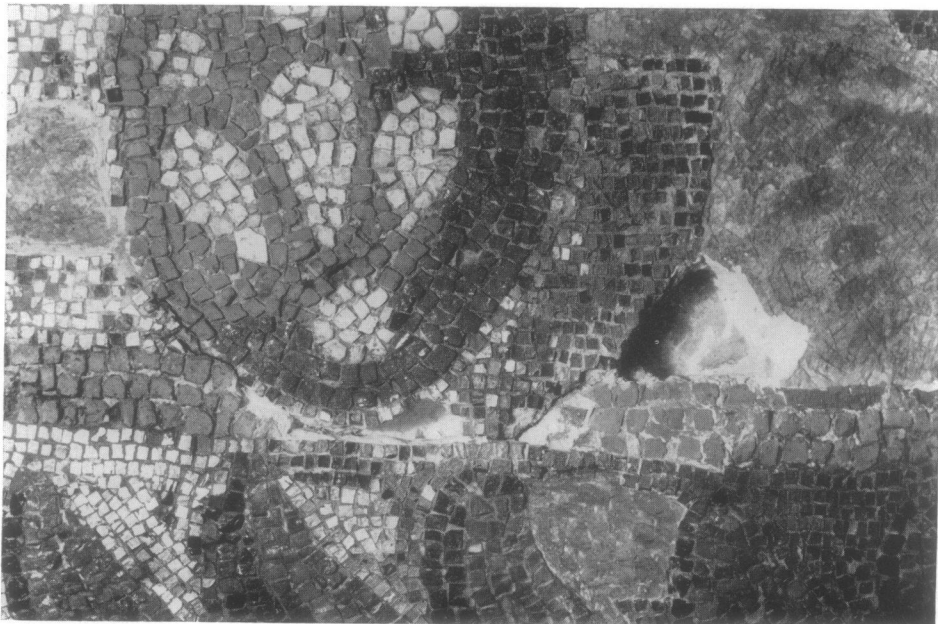
46. South Archangel, Right Wing



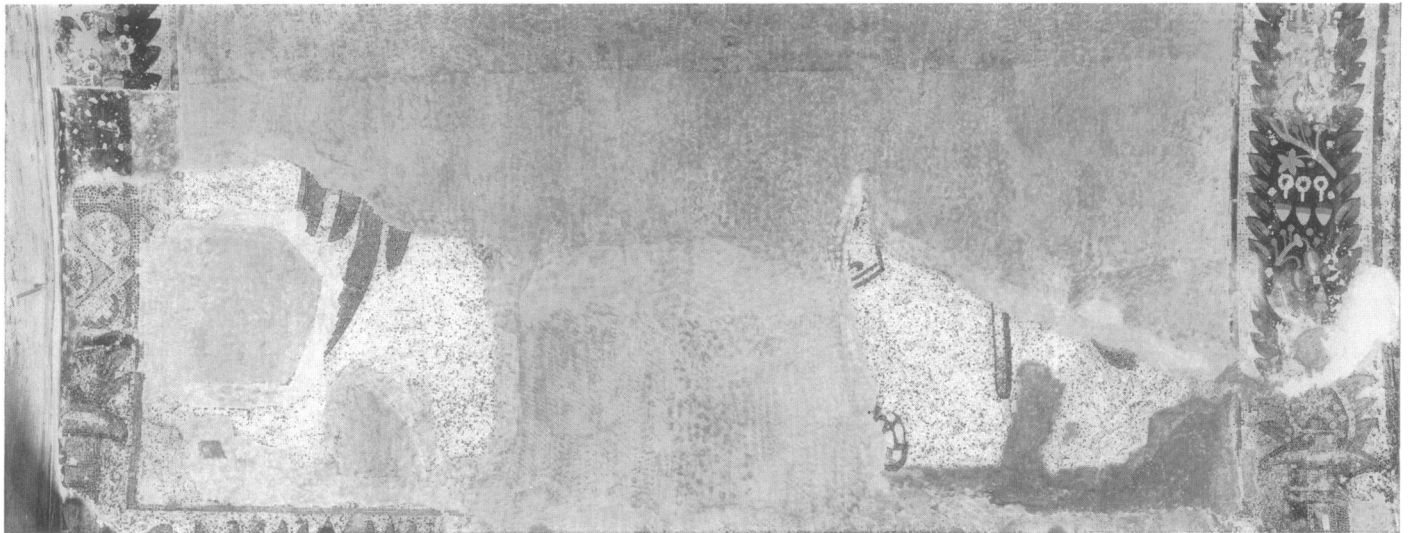
47. South Archangel, Left Wing



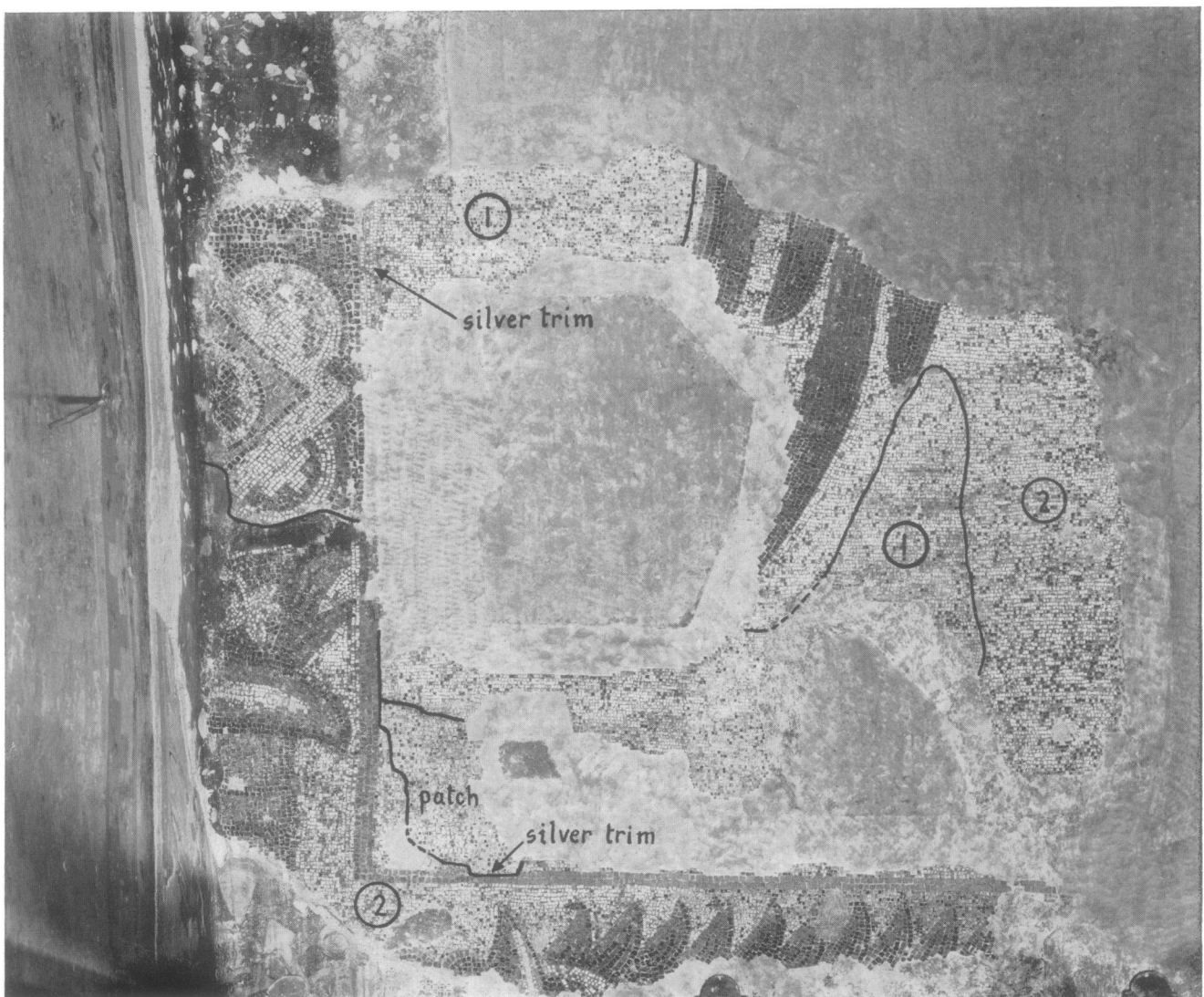
48. Left Foot



49. Toe of Left Foot



50. Bema Arch, North Archangel



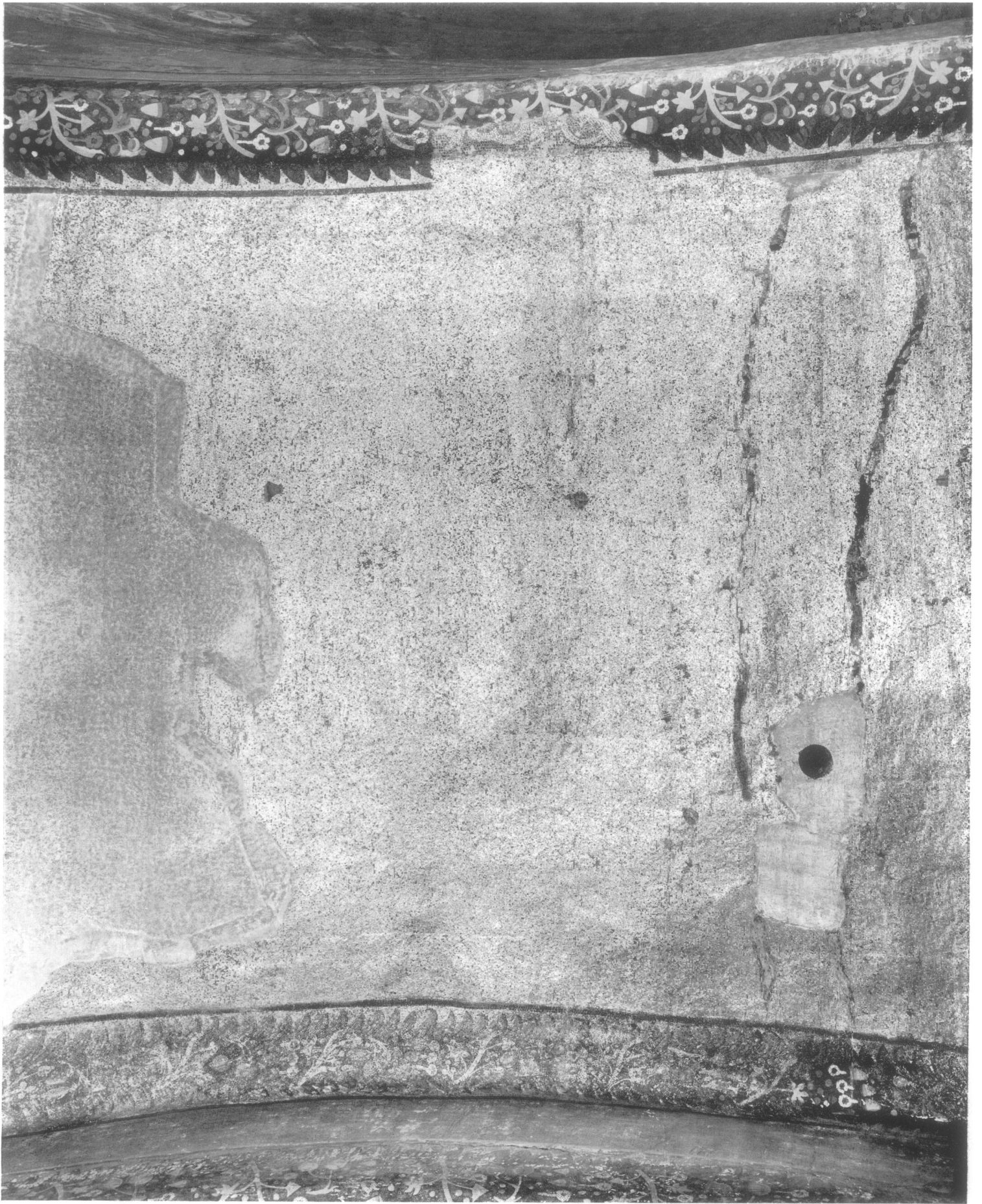
51. North Archangel, West Fragment



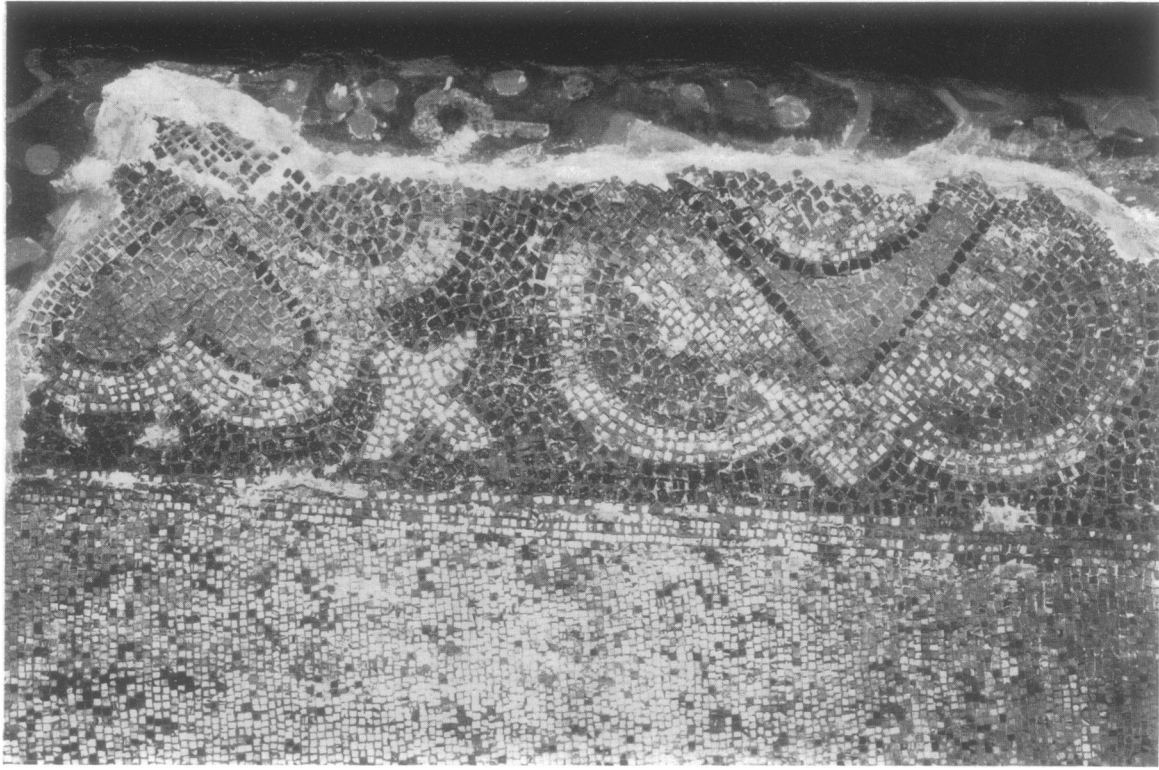
52. North Archangel, East Fragment



53. West Edge of Bema Arch, Fragment of Geometric Border



54. Soffit of Bema Arch at the Crown, looking up



55. West Edge of Bema Arch, Fragment of Geometric Border



56. East Reveal of Main South Arch with Partially Cleaned Mosaic Designs